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DEPARTMENT OF THE ARMY FIELD MANUAL

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**AERIAL SURVEILLANCE—  
RECONNAISSANCE  
FIELD ARMY**

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*HEADQUARTERS, DEPARTMENT OF THE ARMY  
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## AERIAL SURVEILLANCE—RECONNAISSANCE

### FIELD ARMY

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# CHAPTER 1

## INTRODUCTION

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### 1. Purpose

This manual is published to provide guidance to commanders and staffs directly concerned with the collection and use of information obtained by aerial means. The manual amplifies FM 30-5 and should be used in conjunction with it.

### 2. Scope

a. This manual outlines the procedures for determining aerial surveillance and aerial reconnaissance requirements, the processing of requests, and the planning and coordination incident to the collection, processing and dissemination of information obtained by aerial means. This manual includes only those details and techniques described in other manuals which are necessary to complete understanding and continuity.

b. The material presented is applicable to all

forms of warfare and under all environmental conditions.

c. Users of this manual are encouraged to submit recommended changes or comments to improve the manual. Comments should be keyed to the specific page, paragraph, and line of the text in which the change is recommended. Reasons should be provided for each comment to insure understanding and complete evaluation. Comments should be forwarded direct to the Commandant, U.S. Army Intelligence School, Fort Holabird, Md.

### 3. Responsibilities

a. The commander is responsible for all intelligence activities of his command. See FM 100-5.

b. Planning and coordination of those command functions which pertain to intelligence are the general staff responsibilities of the ACofS, G2.

## CHAPTER 2

### G2 AIR ORGANIZATION AND FUNCTIONS

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#### Section I. ORGANIZATION

##### 4. General

a. Planning and coordination of the aerial surveillance — reconnaissance operations and activities of the command are staff responsibilities of the ACoS, G2 exercised through the G2 Air.

b. At all echelons the G2 Air is responsible to the G2 for supervision of the collection and dissemination of information concerning the location, strength, disposition, movement, and military installations of the enemy as visually observed and sensed from the air; and to advise the G2 on matters pertaining to aerial surveillance and reconnaissance. To accomplish these responsibilities, he formulates policies and procedures for use in selecting missions; requests aerial surveillance and reconnaissance support; receives, consolidates, and assigns priorities to aerial reconnaissance requests; and performs the necessary staff coordination.

##### 5. Organization and Location

a. *General.* The G2 Air elements at field army, corps, and division are organized into duty teams to provide for 24-hour operations. At field army it is desirable that a long-range planning section and duty team for the alternate tactical operation center (TOC) be organized. A type field army G2 Air branch organization chart with related duty assignments is shown in appendix IV. G2 Air personnel are located at all command echelons from field army through division. At lower echelons these duties are performed by S2 or, where provided, by his assistant.

b. *Field Army and Independent Corps.* In the field army and independent corps, the majority of G2 Air personnel are part of the tactical air support element (TASE) of the field army tactical operations center (FATOC/

ICTOC). The TASE is normally co-located with the fire support element (FSE).

c. *Corps.* In the corps tactical operations center (CTOC), G2 Air personnel of the TASE are located with the FSE as in the field army/independent corps concept.

##### d. *Division.*

- (1) In all divisions, the G2 Air group forms part of the TASE of the division tactical operation center (DTOC). The TASE is colocated with the fire support element of the DTOC. The TASE is not under control of the fire support coordinator. These personnel are the minimum for operational efficiency, and additional personnel may be required for extended operations.
- (2) In the airborne division, the senior imagery interpreter from the division military intelligence detachment may be used to augment the element as a duty team chief, when needed.
- (3) In the infantry brigade headquarters of the infantry division, provision must be made for the inclusion of an Assistant S2 for Air if the brigade is to be used for independent operations.

e. *U.S. Army Missile Commands.* Missile command operations are conducted from the command headquarters or from a separate fire control and coordination section. Therefore, S2 Air personnel will operate from either location, as directed.

f. *Armored Cavalry Regiment.* In the armored cavalry regiment, an S2 Air is provided. To provide continuous operation, the senior imagery interpreter of the attached military intelligence detachment may be designated as Assistant S2 Air.

*g. Other Units.* In all other units, supervision of the aerial surveillance and recon-

naissance effort is handled by the S2 or Assistant S2.

## Section II. FUNCTIONS

### 6. General

The general functions of the G2/S2 Air at all echelons include the following:

- a.* Advises the G2/S2 on matters pertaining to aerial surveillance.
- b.* Recommends policies and procedures for conduct of aerial surveillance.
- c.* Prepares the aerial surveillance plan.
- d.* Prepares the aerial surveillance SOPs.
- e.* Assists other staff sections in establishing requirements to include special studies.
- f.* Processes aerial surveillance requests.
- g.* Establishes priorities for aerial surveillance requests within the command.
- h.* Maintains and disseminates information of the capabilities and allocations of the aerial surveillance support.
- i.* Disseminates information resulting from aerial surveillance operations.
- j.* Implements cover and deception measures.
- k.* Participates with G3/S3 Air in planning close air support and interdiction.
- l.* Provides for briefing and debriefing personnel directly engaged in aerial surveillance operations.
- m.* Supervises the imagery interpretation effort at his echelon.

### 7. Specific

In addition to performing the general functions listed in paragraph 6, specific functions are accomplished by G2/S2 Air as indicated.

#### *a. Field Army/Independent Corps G2 Air.*

- (1) Coordinates the scheduling of available tactical air reconnaissance effort with the senior reconnaissance duty officer, Air Support Operations Center (ASOC).
- (2) Conducts appropriate portions of the daily planning conference with ASOC.
- (3) Supervises the employment of M.I. Battalion (ARS) and imagery interpreters with the G2 section.
- (4) Disseminates intelligence of the enemy air capability to the TOC.

#### *b. Corps G2 Air.*

- (1) Coordinates between division and field army G2 Air.
- (2) Monitors immediate aerial surveillance requests from division to army, interrupting only to indicate disapproval.

#### *c. Division G2 Air.*

- (1) Coordinates the reproduction of imagery with division photo reproduction facility.
- (2) Coordinates with the G3, the Aviation Company Commander, and the Aerial Surveillance Platoon Leader in the selection of sites for aerial surveillance operations.

*d. Armored Cavalry Regiment.* The functions performed in the armored Cavalry Regiment are essentially the same as those accomplished by the division G2 Air.

## CHAPTER 3

# CONCEPT OF AERIAL SURVEILLANCE AND RECONNAISSANCE EMPLOYMENT

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### 8. General

Aerial surveillance and reconnaissance are performed in support of the field army and its subordinate units by aerial surveillance units organic to the army, the tactical air force, or other supporting services. The primary source of aerial reconnaissance support is the tactical air force or the air arm of other supporting services. When Army organic means can more effectively, or more responsively, meet the requestor's reconnaissance requirement, it should be used within the limitations of the aircraft and its sensors. Specific requirements are developed at any echelon, and either accomplished at that echelon or submitted to higher headquarters for accomplishment. Army organizations support the development, printing, interpretation and reporting functions. At corps and division level, organic photo reproduction units develop and print imagery. Image interpretation is done by the military intelligence detachment attached to the headquarters. At field army, the MI Battalion (ARS) maintains contact with the air force; and prints, interprets, and reports on the imagery and information received.

### 9. Support by Tactical Air Force

Tactical reconnaissance wings of the tactical air force (TAF) normally support both army and air force operations and requirements. A tactical air force contains one or more tactical reconnaissance wings. The tactical air reconnaissance wing may contain from three to five operational squadrons. A possible combination is two day reconnaissance squadrons of fighter aircraft and two night squadrons of light bomber aircraft and one weather-electronic squadron and is supported by one or more reconnaissance technical squadrons. Squadrons usually operate from dispersed airfields. The day reconnaissance squadron performs visual

and photographic reconnaissance; the night reconnaissance mission includes night photographic reconnaissance and radar reconnaissance. The aircraft are capable of high and low-level mapping photography. The weather-electronic reconnaissance squadron contains separate aircraft for weather information collection and for obtaining information about the enemy electronic order of battle.

### 10. Navy and Marine Corps Support

When Naval Air or Marine Corps Air Units provide the preponderance of air support to army operations, the operational procedures will be established by the joint force commander.

### 11. Allied Support

When supported by aerial reconnaissance elements of allied nations, commanders concerned will use mutually acceptable procedures and techniques.

### 12. Army Aviation Support

Army aviation units of the armored cavalry regiment, missile command, division, corps, and field army are capable of performing aerial surveillance missions. These capabilities include using visual means from manned aircraft, and optical and electronic devices, both from manned aircraft and drones. Equipment and organization of the units vary; however, the mission of providing combat surveillance support from aerial platforms remains unchanged.

### 13. Aerial Surveillance Intelligence Cycle

*a. General.* The aerial surveillance intelligence cycle at division, corps, and field army is composed of a number of actions, taken in sequence by action personnel. At each echelon the action sequence follows a similar pattern. The variations at each echelon involve person-



| Functions                                | Field Army                                             | Corps                 | Division                                               | Armored Cavalry Regiment          | Other                 |
|------------------------------------------|--------------------------------------------------------|-----------------------|--------------------------------------------------------|-----------------------------------|-----------------------|
| Air Request Control                      | G2 Air                                                 | G2 Air                | G2 Air                                                 | S2 Air                            | S2 or Asst S2         |
| Mission Assigned                         | TAF Recon Sq                                           | -                     | Aerial Survl Platoon                                   | Aerial Survl Platoon              | -                     |
| Briefing - General and Pre-flight        | Air Reconnaissance Liaison Officer (ARLO, MI Bn (ARS)) | -                     | G2 Air Repr. (Sr. Image Interpr.)                      | S2 Air Repr. (Sr. Image Interpr.) | -                     |
| Mission Airborne                         | TAF Recon Sq                                           | -                     | Aerial Survl Platoon                                   | Aerial Survl Platoon              | -                     |
| Debriefing                               | ARLO, MI Bn (ARS)                                      | -                     | G2 Air Repr. (Sr. Image Interpr.)                      | S2 Air Repr. (Sr. Image Interpr.) | -                     |
| Initial Imagery Development and Printing | TAF Recon Tech Sq                                      | -                     | Imagery processing foc Aerial Survl Platoon/Div Sig Bn | Aerial Survl Platoon              | -                     |
| Immediate Imagery Interpretation         | MI Bn (ARS)                                            | -                     | MI Det                                                 | MI Det                            | -                     |
| Prints for Units                         | MI Bn (ARS)                                            | -                     | Imagery processing foc Aerial Survl Platoon/Div Sig Bn | Aerial Survl Platoon              | -                     |
| Intelligence Production                  | G2                                                     | G2                    | G2                                                     | S2                                | S2                    |
| Dissemination                            | Army Information Net or MI Bn (ARS) Courier            | Intelligence Channels | Intelligence Channels                                  | Intelligence Channels             | Intelligence Channels |

Figure 1. Action agencies in aerial surveillance intelligence cycle.

nel, equipment, and administrative detail, but the same thought process and sequence of action is used at all echelons. Figure 1 enumerates the principal actions and indicates the individual, unit, or means used to accomplish each action for the echelons of command through field army. Within any echelon, commanders or staff officers may originate requests which are forwarded to the G2/S2 Air for processing. Close staff supervision through all phases of the cycle and coordination with supporting units must be achieved by the G2 Air to obtain maximum return from the effort expended. Development of specific unit SOPs will facilitate and expedite the performance of these functions.

*b. Field Army Aerial Surveillance Intelligence Cycle.* The aerial surveillance intelligence cycle (fig. 2) is based on the determination of a specific requirement for information and the action necessary to fulfill the requirement at any echelon of command. The G2 Air may initiate a requirement, or he may receive it from another staff section or from a subordinate unit. As the G2 Air, he is the staff supervisor of the request until action upon it has been completed and the originator so advised.

- (1) *Air request control.* Requests received or originated at field army are approved by the G2 Air. A priority is established for each approved request. An approved request may be accomplished by organic means when provided, or forwarded to TAF (ASOC). Close coordination between G2 Air and ASOC determines when missions are flown within the allocation of aircraft. When the ASOC accepts a request and designates a unit to fly the mission, the G2 Air is notified. The G2 Air furnishes the MI Battalion (ARS) with the detailed mission information.
- (2) *Mission assigned.* The designated flying unit will allocate specific personnel and equipment to the mission and advise the ARLO.
- (3) *Briefing.* The flying personnel assigned a mission are furnished necessary information at general and pre-

flight briefings by the flying unit and the ARLO (ch. 9).

- (4) *Mission airborne.* During the flying of a mission, the flying personnel may observe information of immediate tactical value, then in-flight spot reports are made and the information is disseminated to interested units.
- (5) *Debriefing.* On return from a mission, the flying personnel are debriefed by the ARLO and information of immediate value is disseminated by a spot report to the affected units. Mission reports are prepared by the ARLO listing the information obtained. Reports are transmitted through the MI Battalion (ARS) to users via the army information net.
- (6) *Initial imagery development and printing.* The imagery return from the mission is initially developed and printed by the TAF technical reconnaissance squadron. A negative and two prints are furnished the air reconnaissance support detachment of the M. I. Battalion (ARS) at the air base.
- (7) *Immediate image interpretation.* Image interpreters of the ARS detachment analyze the AF-furnished prints or negatives to produce information of intelligence value. Spot reports (ch. 8) are disseminated when information of immediate value is obtained. Immediate reports are prepared and disseminated to exploit the information obtained.
- (8) *Prints for units.* When required, additional prints of imagery are reproduced by the MI detachment (ARS) at the airfield. Print delivery is made by the Battalion Delivery Platoon (ch. 7).
- (9) *Intelligence production.* The field army G2 Air supervises the intelligence return to insure integration with other intelligence. Special and detailed reports are made by MI Battalion (ARS) as directed by the G2 Air.
- (10) *Dissemination.* The field army G2 Air supervises the dissemination of intel-

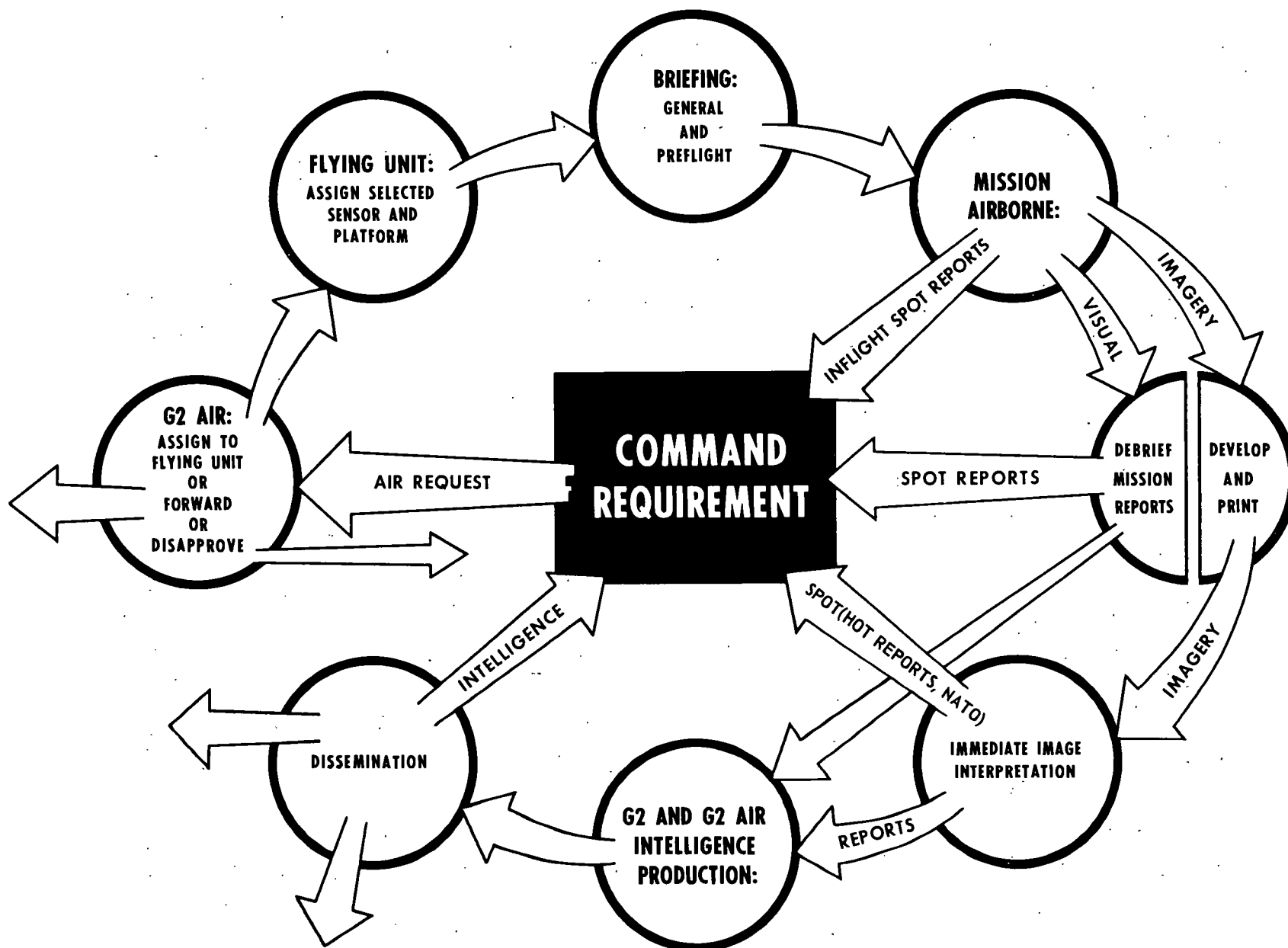


Figure 2. Aerial surveillance intelligence cycle.

ligence to the requesting unit, thereby completing the aerial surveillance intelligence cycle.

*c. Corps Aerial Surveillance Intelligence Cycle.* The aerial surveillance intelligence cycle at the corps is the same as the division cycle when aerial support is provided. By selective forwarding of requests, the corps G2 Air controls the corps aerial surveillance requirements. The aerial surveillance intelligence cycle at an independent corps is similar to the cycle at field army.

*d. Division Aerial Surveillance Intelligence Cycle.* The aerial surveillance intelligence cycle (fig. 2) at division is comparable to that of the field army. Differences occur only in the organization and capability of supporting units. A brief description of the actions taken during the cycle follows:

- (1) *Air request control.* The division G2 Air initiates requirements and receives requests from other staff sections and subordinate units. By screening requests he controls the effort requested in the division area. An approved request may be accomplished either by organic means within the division or forwarded to the corps for further processing. The division G2 Air supervises and coordinates the missions accomplished within the division.
- (2) *Mission assigned.* Missions for the aerial surveillance platoon are assigned to the division aviation company; the division aviation staff officer is informed.
- (3) *General briefing and preflight.* A G2 Air representative at the airstrip briefs the operational personnel (ch. 9).
- (4) *Mission airborne.* The mission is flown. When information of immediate value is observed by the airborne crew or telemetry, a spot report is made to the unit concerned.

(5) *Debriefing.* The flying personnel are debriefed by a G2 Air representative at the airstrip. Spot reports of information of immediate value are made to the unit concerned. Mission reports are prepared and forwarded to G2 Air for further processing.

(6) *Initial imagery development and printing.* Imagery is processed by the photographic laboratory organic to the aerial surveillance platoon, normally at the division main airstrip. When required additional support may be provided by a photographic laboratory assigned to the division signal battalion.

(7) *Immediate image interpretation.* Image interpreters from the division MI detachment accomplish immediate interpretation of developed imagery and of telemetry. Spot reports of items of immediate value are made to interested units, and immediate reports are furnished to the G2 Air for processing.

(8) *Prints for units.* Within the capabilities of organic and supporting photographic laboratories, photographic prints will be furnished requesting units.

(9) *Intelligence production.* Information obtained from aerial surveillance is processed by the division G2 section.

(10) *Dissemination.* The G2 Air exercises sufficient supervision to insure that the requesting unit receives a reply to its request.

*e. Aerial Surveillance Intelligence Cycle for Other Units.* The pattern for obtaining information through the use of aerial vehicles is similar at all echelons having organic aerial surveillance vehicles. Personnel and units accomplishing aerial surveillance functions are listed in figure 1. Units not having aerial surveillance means submit requests to the next higher echelon for appropriate action.

## CHAPTER 4

### AERIAL SURVEILLANCE MISSIONS

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#### Section I. MISSIONS CLASSIFIED ACCORDING TO THE TIME AVAILABLE

##### 14. General

Aerial surveillance requests are classified as preplanned and immediate. Both are processed in essentially the same manner through each operational cycle.

##### 15. Preplanned Missions

Anticipated requirements for intelligence information are met by preplanned missions. The most productive results accrue from aerial surveillance missions when planning is initiated in advance of operations. This procedure permits proper selection and allocation of platforms and sensors, and allows thorough briefing of operational personnel. Interpretation

and dissemination may be planned and other coordinating actions accomplished as desired.

##### 16. Immediate Missions

Unforeseen requirements for current intelligence information require immediate missions, and a portion of the air effort is allocated to meet the requirement. Aerial surveillance requests for immediate missions are forwarded as expeditiously as possible. At field army the request may be fulfilled by ground alert aircraft which have been allocated to the field army or the ASOC for this purpose, or by diverting preplanned flights from less important missions. Usually ten percent of the total sorties available are retained on ground alert to meet immediate requests.

#### Section II. MISSIONS CLASSIFIED BY THE SENSOR USED

##### 17. General

Aerial surveillance missions are classified according to the sensors used; visual, permanent record image, electronic intelligence, and weather. Any or all of these types may be necessary to support an area of operations. Aerial surveillance missions generally are interrelated and of complementary significance in terms of the information produced. Much of the intelligence information gained through aerial surveillance accrues to the benefit of all services, regardless of the purpose or unit for which it was obtained.

##### 18. Visual Aerial Surveillance

a. *General.* Visual aerial surveillance is defined as the gathering of information through observation by aircraft crews. Current information of the enemy area of activity can be obtained rapidly by this means. The value of visual aerial surveillance lies in the speed with

which information of fleeting targets can be relayed to friendly units capable of attacking those targets. Visual sightings may be assisted by the use of voice recording and sensory equipment to increase accuracy and detail. There are five general types of visual aerial surveillance: area search, specific search, route reconnaissance, artillery adjustment, and contact reconnaissance.

- (1) *Area search.* Area search is used to observe clearly limited and defined areas. These defined areas extend from the forward edge of the battle area to the required depth into enemy territory.
- (2) *Specific search.* Specific search is used to reconnoiter a limited number of points for specific information.
- (3) *Route reconnaissance.* Route reconnaissance covers enemy lines of communication such as roads, railroads, and waterways. It is carried out on a

point-to-point or town-to-town basis over the enemy's transportation arteries.

- (4) *Artillery adjustment.* Artillery adjustment is the correcting of artillery or naval gunfire. It is the responsibility of those organic army air observers assigned an artillery support mission; however, tactical air reconnaissance pilots can also accomplish this mission.
- (5) *Contact reconnaissance.* Contact reconnaissance is a means of locating isolated friendly units which are out of contact with the main force. Pre-arranged air-ground signals are a requisite, and are prescribed in advance of an operation.

*b. Limitations of Visual Aerial Surveillance.* Much information is collected by a trained and experienced observer; however, he is limited by the speed and vibration of the aircraft, the distance from which he must observe, enemy air defense and concealment measures, and poor visibility. Many limitations of visual aerial surveillance may be overcome by using sensory devices to verify and supplement visual sightings.

## 19. Permanent Record Imagery Reconnaissance

*a. General.* Permanent record imagery is essential before, during, and after operations. All commanders require information concerning the location and disposition of the enemy. Aerial imagery can normally meet this requirement by providing recorded images which are studied, analyzed, and interpreted. Such analysis is more detailed and accurate than that derived from visual observation. The use of permanent record imagery requires sensory and recording equipment of various degrees of complexity. The time lag between acquisition and interpretation of permanent imagery may reduce or negate the value of information collected concerning transient and fleeting targets. Permanent imagery may be obtained through the use of—

- (1) Cameras.
- (2) Emission detectors (light and heat in the infrared portion of the electromagnetic spectrum).

(3) Radar.

(4) Electromagnetic intercept devices.

*b. Permanent Record Imagery.* The three categories of permanent record imagery commonly used by the image interpreter are—initial record, general intelligence record, and detailed intelligence record.

- (1) *Initial record.* Initial record is the complete permanent image coverage, flown seasonally, of a projected area of operations usually extending from the line of contact with enemy ground forces to deep within the enemy territory. Photographic coverage will be of medium scale (1:8000 to 1:20000), and suitable for stereoscopic study. Initial record provides basic information about enemy installation and defenses, cultural features, trafficability, soil and vegetation. Its principal purpose is to provide a basis for evaluating changes in enemy-occupied territory. Areas subject to seasonal changes are recorded under conditions characteristic of each season to eliminate the observed differences caused by seasonal variations. Vertical initial record may serve as a map substitute or supplement. The field army normally supervises the automatic initial distribution to subordinate units according to areas of interest, and supplementary issues are made as necessary. Typical allowances are shown in FM 101-10.

- (2) *General intelligence record.* This is vertical, medium scale (1:8000 to 1:20000) imagery coverage within the field army area of interest. It provides current intelligence information and is compared with prior imagery (initial record) to determine current location and disposition of enemy installations, troop concentrations, troop movements, equipment and supplies. This type of imagery is normally requested by divisions and higher headquarters.

- (3) *Detailed intelligence record.* In order to supplement the general intelligence record by providing large scale

imagery of areas of specific interest in the battle area, detailed intelligence record is obtained. It provides the imagery for detailed analysis of selected terrain features, installations and equipment. It is frequently necessary to use more than one sensing or recording system over the target. Following are types of detailed analysis:

- (a) *Vertical analysis.* The study of large scale (1:1000 to 1:8000) photographs reveals the plan and heights of installations not shown in general intelligence record.
- (b) *Oblique analysis.* The study of air photographs taken at an angle from the vertical will reveal installations from the elevation viewpoint. This type of imagery is particularly important in the analysis of features not suitable for vertical analysis, such as concealed or well camouflaged installations.
- (c) *Concealment analysis.* Installations equipment hidden from observation may be detected and subjected to study by special recording techniques, i.e., camouflage net located through general intelligence record may be identified as covering for mechanical equipment when the area is subjected to infrared search.
- (d) *Deception analysis.* Enemy measures designed to develop and confuse friendly intelligence collection agencies may be detected through analysis and comparison of photographic and electronic presentations such as radar, infrared and electronic intelligence.

c. *Mapping Photography.* Mapping or charting photography is taken for the purpose of preparing or revising maps and charts. It is usually taken at much smaller scales than in-

telligence photography and should be used for intelligence purposes only when no other intelligence photography is available. This photography is taken with special stabilized cameras and other equipment. The flight pattern and elevation are carefully controlled.

## 20. Electronic Intelligence Reconnaissance

Electronic intelligence reconnaissance is the collection of information of the location and purpose of enemy noncommunication electromagnetic radiation emitters. It is sometimes known as "ferreting." It is used to locate and analyze various electromagnetic radiating devices operated by the enemy. The information collected is used for two purposes:

- a. To determine the enemy electronic order of battle.
- b. To determine the most effective countermeasures.

## 21. Weather Reconnaissance

Weather reconnaissance by the tactical air force is the action taken to obtain weather data over areas where weather reports are not available. Weather reconnaissance is accomplished:

a. To obtain weather data for use in preparing weather analysis and forecasts. These missions fall into two general classes—

- (1) Scheduled mission which make weather observations, to include atmospheric soundings, at predetermined locations and at scheduled times.
- (2) Unscheduled missions to investigate doubtful weather conditions which will affect the battle area.

b. To obtain special reports of weather conditions along the routes to and in the vicinity of targets for proposed air operations. These reports are required to permit immediate operational decisions such as diversion, change of flight track, or cancellation of mission.

## CHAPTER 5

### AERIAL SURVEILLANCE PLANNING, OPERATIONS AND COORDINATION

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#### Section I. GENERAL PLANNING

##### 22. General Concept

Aerial surveillance planning is based on the mission, the commander's concept of operation, and the EEI. In preparing the aerial surveillance plan, the G2 Air at each echelon must consider his own requirements as well as those of subordinate elements.

##### 23. Phases of Planning

Aerial surveillance planning is divided into two phases: long-range planning and day-to-day planning. The sequence of planning is essentially the same for both phases (app. II). Long-range planning is accomplished by the field army G2 Air, while day-to-day planning is conducted at all echelons. Each phase is modified as required.

##### 24. Sequence of Planning

The broad steps in the preparation of the plan are—

a. Determination of aerial surveillance requirements.

b. Assignment of a priority to each requirement.

c. Determination of aerial surveillance capabilities and the adjustment of the priority requirements to those capabilities.

##### 25. Planning Principles

Principles considered in planning are—

a. *Essential Elements of Information.* The G2 Air bases his plan and establishes the priorities of specific elements of the plan on the EEI or other guidance furnished by the G2. He insures that the plan will yield the information required to supplement, support, or change the tactical planning. Generally, the EEI will

serve to indicate the aerial surveillance to be planned for and requested.

b. *Economy of Force.* Economy of force is the planned use of equipment to obtain a maximum return from available resources. It is attained through the consolidation and integration of requests and tasks, the denial of requests which would duplicate information currently available, and the allocation of the available effort in relation to the requirements.

c. *Flexibility.* Maximum flexibility is gained by the selection of alternate objectives. This is true during periods of marginal visibility; e.g., a photographic mission where unexpected cloud cover may occur over the primary area of interest.

d. *Priorities.* Aerial surveillance requests are arranged in priority sequence. The basis for determination of priorities is the urgency and importance of the requested information to the requesting command. This is influenced by the unit mission, tactical situation, and the use for which the surveillance is intended. A Roman numeral is used to indicate to the higher G2 Air the priority based on the importance of the requirement to the unit mission.

(1) *Priority I.* Surveillance of enemy units or activities to include nuclear delivery means, that would prevent the execution of the friendly force mission.

(2) *Priority II.* Surveillance of enemy units or activities capable of immediate serious interference with the mission; and the surveillance required in the conduct of current tactical operations.

(3) *Priority III.* Surveillance of enemy units or activities capable of ultimate



| Tactical Action | Situation and General Considerations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Aero Reconnaissance Emphasis                                                                                                                                                                                                                          | Specific Information Sought                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Withdrawal      | <ol style="list-style-type: none"> <li>G2 Air can expect: <ol style="list-style-type: none"> <li>Enemy air superiority.</li> <li>Limited TAF support.</li> <li>Fast moving fluid situation.</li> <li>Possible non-availability of Initial record and general intelligence record imagery.</li> </ol> </li> <li>The G2 Air should plan to: <ol style="list-style-type: none"> <li>Use organic aircraft and drones for primary support.</li> <li>Use immediate missions to meet the requirements developed by the fluid situation.</li> <li>Use visual air reconnaissance to meet the requirements for timely reporting of information.</li> </ol> </li> <li>If friendly air superiority is obtained, G2 Air should: <ol style="list-style-type: none"> <li>Plan full use of available TAF visual reconnaissance.</li> <li>Coordinate with G3 Air for use of armed aerial reconnaissance.</li> </ol> </li> </ol> | <ol style="list-style-type: none"> <li>Areas in which enemy is applying or has capability of applying most pressure.</li> <li>Areas most likely to be occupied by enemy as indicated by knowledge of his tactics, deployment and reserves.</li> </ol> | <ol style="list-style-type: none"> <li>Enemy avenues of approach.</li> <li>Troop movement (type and size).</li> <li>Displacement of weapons.</li> <li>Movement of reserve units.</li> <li>Location and condition of obstacles including choke points.</li> <li>Location of command posts, supply and evacuation establishments.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Defense         | <ol style="list-style-type: none"> <li>Since defense is normally a prelude to the offense, G2 Air must: <ol style="list-style-type: none"> <li>Detect enemy buildup for defense or attack.</li> <li>Assist in planning for friendly attack.</li> </ol> </li> <li>The G2 Air at corps and division should determine enemy buildup by: <ol style="list-style-type: none"> <li>Employing organic aviation to keep enemy under surveillance.</li> <li>Employing non-organic aerial reconnaissance to extend depth of coverage.</li> </ol> </li> <li>The G2 Air should assist in planning for friendly attack by: <ol style="list-style-type: none"> <li>Continuing surveillance along entire front, concentrating along planned axis of advance.</li> <li>Determining areas to be reconnoitered.</li> </ol> </li> </ol>                                                                                            | <p>Even distribution of reconnaissance across entire front with emphasis on:</p> <ol style="list-style-type: none"> <li>Areas of greater enemy activity.</li> <li>Areas in which friendly activity is contemplated.</li> </ol>                        | <ol style="list-style-type: none"> <li>Detection of enemy buildup. <ol style="list-style-type: none"> <li>Location and estimated strength of enemy units along FEBA.</li> <li>Location, type and estimated strength of enemy reserve.</li> <li>Location enemy supporting weapons.</li> <li>Location enemy observation posts.</li> <li>Location enemy avenues of approach.</li> <li>Location command posts and supply points.</li> <li>Location enemy armor.</li> <li>Enemy troop movement.</li> <li>Location of obstacles.</li> </ol> </li> <li>Preparation for attack. <ol style="list-style-type: none"> <li>Continuous study of comparative cover vs initial record imagery.</li> <li>Special imagery cover and studies: <ol style="list-style-type: none"> <li>Trafficability.</li> <li>Enemy strong points.</li> <li>Condition of railways and marshalling yards.</li> <li>Condition of enemy airstrips to determine feasibility of friendly use.</li> <li>Friendly avenues of approach.</li> </ol> </li> <li>Continuous location of enemy reserves with emphasis on armor.</li> </ol> </li> </ol> |
| Attack          | <p>The G2 Air can expect a fluid situation in which maximum support by air reconnaissance of the TAF is available. The G2 Air should:</p> <ol style="list-style-type: none"> <li>Use direct observation to meet requirements for timely exploitation and reporting of information.</li> <li>Adjust depth and size of area to be reconnoitered based on rate of advance.</li> <li>Make maximum use of night visual, photographic and electronic surveillance.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                        | <ol style="list-style-type: none"> <li>Concentrated in front of main attack.</li> <li>Areas occupied by enemy reserve forces (especially armor).</li> </ol>                                                                                           | <ol style="list-style-type: none"> <li>Movement enemy units (to and from FEBA). <ol style="list-style-type: none"> <li>Actual movement (type, size, direction).</li> <li>Location of vacated areas.</li> <li>Location newly occupied areas.</li> </ol> </li> <li>Movement enemy reserve.</li> <li>Displacement enemy supporting weapons (type, number and direction of movement).</li> <li>Enemy resupply activities.</li> <li>Location and condition of obstacles.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

Figure 3. Planning consideration for tactical actions.

serious interference with the mission; and the surveillance required to support planned future operations.

- (4) *Priority IV.* Surveillance of enemy units or activities capable of limited interference with the mission; the surveillance required for administrative and logistical purposes.

*e. Cover and Deception.* The implementation of cover and deception measures must be considered where scheduled aerial surveillance missions over the assault area could compromise the operation by indicating unusual interest in that area. Cover and deception measures available are—reducing the number of missions over the area, simulating interest elsewhere, control of flight lines in the area to obtain a random appearance, and integrating reconnaissance with offensive missions. These measures must be coordinated with the Counterintelligence Branch and must be incorporated into the Counterintelligence Plan. The G2 Air must expect to divert part of the surveillance capability to implement cover and deception activities.

## 26. Planning Factors

The major factors considered in planning in view of their effect upon the tactical situation and upon aerial surveillance missions are—

*a. Friendly and Enemy Situation.* The G2 Air considers the type and extent of planned operations in developing aerial surveillance plans (fig. 3).

*b. Capabilities.* The G2 Air considers the favorable and limiting characteristics of the sensors and platforms available, and the capabilities of the reproduction, interpretation, and dissemination agencies and facilities.

*c. Terrain.* A study of the terrain is made to aid in determining the enemy disposition and possible courses of action. The G2 Air uses this information to plan missions and to assign priorities as necessary. Care is exercised to eliminate preconceived or fixed ideas regarding the enemy's use of terrain.

*d. Weather.* Aerial surveillance plans are based upon predicted weather to exploit the proper sensor in the environment best suited to its operating characteristics. Planning is

|             | Initial Record Imagery                                                            | General Intelligence Record                    | Detailed Intelligence Record                                                                                                 | Visual Observation                                  |
|-------------|-----------------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| Field Army* | Cover entire area, seasonally (use general intelligence record imagery to update) | Selected areas, daily to once per three weeks  | Specific Points Variable - based on current or projected operations and information developed from other imagery or sources. | Area Surveillance, four to eight times daily        |
| Corps*      |                                                                                   | Selected areas, daily to once every seven days | Same as Field Army                                                                                                           | Area Surveillance, continuous to once per six hours |
| Division*   |                                                                                   | Selected areas, daily to once per four days    | Same as Field Army                                                                                                           | Area Surveillance, continuous to one per four hours |
| Other Units | On request                                                                        | Selected areas per specific requirement        | Same as Field Army                                                                                                           | Area Surveillance. Special requirement              |

\*Units, objects and activities of intelligence interest are listed in FM 30-5, Combat Intelligence.

Figure 4. Type requirements by area and frequency.

flexible to allow for the variation between predicted and actual weather.

## 27. Requirements

The requirements of the command will in-

dicade where, when, and how often surveillance coverage is required. Detailed planning to fulfill the requirements considers periods of darkness and poor visibility. Figure 4 illustrates possible requirements for support.

## Section II. SPECIFIC PLANNING

### 28. Long-Range Planning

a. Long-range aerial surveillance planning, prior to tactical engagement or the conduct of operations, begins with the receipt of a directive from higher headquarters, or the decision of the local commander. The planning establishes those requirements which must be satisfied to obtain the information essential to the commander. Planning is accomplished in the greatest amount of detail possible within the time available to the echelon at which the planning is done, and the capabilities of the supporting forces.

b. In those cases where the opposing forces have not yet engaged in combat, as in an invasion by amphibious forces, the G2 Air bears an especially heavy proportion of the responsibility to obtain intelligence information. Before contact with the enemy, little or no intelligence data will come from subordinate units, since there will be no prisoners of war, patrols, observation posts, deserters, or line crossers to provide it. Thus, the G2 Air is called upon to acquire a greater proportion of intelligence than is true after contact has been made.

c. The first step which the G2 Air takes is to develop the planning program for his branch. This program will be part of the G2 planning program, and will be similar to the example shown in FM 30-5.

d. The G2 Air develops the reconnaissance and surveillance missions necessary to acquire the raw data. He coordinates with the supporting tactical air force or the aviation units of other U. S. or allied services designated to operate with the Army. In addition, where organic aviation elements can accomplish

aerial surveillance, he plans for and coordinates the conduct of surveillance by these elements.

e. The processing of the incoming imagery and visual observation reports into usable form is the next step in the G2 Air's effort. This necessitates having trained image interpreters properly briefed on the operation and directing them in the production of intelligence.

f. The final step in the G2 Air's work is to prepare his output in formats most useful to the troops, agencies, and staffs who will become involved in executing the planned operation. Special maps and defense overprints, annotated imagery, terrain and defense analysis, and up-to-date tactical maps are examples of the results of well-planned and thoroughly coordinated G2 Air operations in the planning phase.

### 29. Day-to-Day Planning and Operations

The same procedure discussed in paragraph 28 is used in day-to-day planning and operations. The G2 Air collection worksheet is used for the orderly development of requirements (app. III). G2 Air derives the EEI pertaining to aerial surveillance from the commander's concept of operations. When approved, the EEI become the outline of priority tasks assigned the G2 Air. The EEI are listed and the indicators are developed for each element. From the listed indicators, the broad requirements are developed as the basis for the aerial surveillance plan, and the specific requirements with collateral requests are developed. Because of the time lag in the aerial surveillance intelligence cycle, specific requests should be prepared as far in advance as possible. Request procedures are discussed in paragraphs 30 and 31.

## Section III. FIELD ARMY/INDEPENDENT CORPS REQUEST PROCEDURES

### 30. Preplanned Requests

a. Preplanned requests are developed through

prior planning, consideration, and deliberation at all echelons before being submitted to field

army. They represent the carefully considered needs of the command. The processing of preplanned requests is the same at all echelons.

b. In addition to the preplanned requests from the subordinate units, the G2 Air duty team chief initiates preplanned requests for the field army. The duty team is in close liaison with the air intelligence officer, ASOC.

c. Requests are logged as shown in figure 19, and a rough draft of the army aerial surveillance plan is prepared. Upon approval by the G2 Air, the completed request is presented to the ASOC reconnaissance officer for execution.

d. The mission numbers, call sign, and other data are received from ASOC; and the information is posted on the mission status board (fig. 21). Pertinent information is disseminated to the requesting units and the MI Battalion (ARS).

e. During the daily operation, changes in the preplanned missions may be required due to aircraft aborts, weather changes, and changes in the enemy situation.

### 31. Immediate Requests

Immediate requests are generated at any echelon and are submitted as required since they stem from the immediate tactical situation.

a. Upon receipt by the G2 Air duty team, the request is entered in the surveillance log (fig. 19) and then passed to the duty team chief who—

- (1) Analyzes the requirement for applicability to the current situation.
- (2) Determines whether the requested in-

formation is currently available, requires duplication of other missions, and is within the capabilities of the organic aviation or TAF.

- (3) Reviews preplanned missions that may be operating in or near the area of interest of the immediate requirement.
- (4) Determines whether the information requested can be obtained in time to be of value to the requesting unit.
- (5) Establishes a priority.

b. In the event of disapproval, the team chief immediately notifies the requester of the reasons for the disapproval.

c. If approved, the request is passed to the ASOC reconnaissance officer who may take the following actions:

- (1) Approve the mission; and complete the TAF portion of the air reconnaissance request, and return the request to the G2 Air, or
- (2) Disapprove the mission when operational factors such as weather or the capability and availability of aircraft prevent its accomplishment. The G2 Air is advised of the reason for disapproval.

d. The G2 Air provides the MI Battalion (ARS) with information and special instructions pertaining to approved missions. The approved mission is posted on the G2 Air mission status board, and the requesting unit notified of the approximate time over target and the radio call sign and frequency assigned the aircraft.

## Section IV. AERIAL SURVEILLANCE REQUEST PROCEDURES AT OTHER UNITS

### 32. Corps Procedures on Immediate Requests

Immediate requests by subordinate units of the corps are submitted to field army headquarters for execution. The corps G2 Air monitors the air request net (fig. 25) and approves requests by remaining silent. If the corps disapproves the mission, the requester and field army are notified simultaneously of the reason for disapproval.

### 33. Division, Missile Command, and Armored Cavalry Regiment

a. The principles and factors discussed in paragraphs 22 through 27 apply to planning and operations at all levels. Since these units have an organic aerial surveillance capability, the G2 Air considers the relative advantages of organic and tactical air force capabilities when processing requirements.

b. The basic considerations and factors in planning aerial surveillance at these levels remain the same as at field army. Before any operation, the field army G2 Air distributes the aerial surveillance appendix (app. V) to all subordinate units. Tabs A and B to this appendix are used by the lower unit G2 Air to request visual route and area surveillance within their areas of interest.

c. In formulating his plan for aerial surveillance, the G2 Air considers the organic aircraft (manned and drone) available. Consideration is also given to the capability of aircraft of the supporting artillery and the combat support elements to furnish a large proportion of the visual surveillance of the immediate combat

zone during daylight hours. The organic aerial surveillance will provide imagery and visual surveillance as required by the G2 Air.

d. Upon receipt of the aerial surveillance plan from higher headquarters, the G2 Air is apprised of the surveillance requirements that will be flown by the supporting air force and those requirements which must be accomplished by organic aerial surveillance. The next task is to match the requirements with aerial platform and sensor capabilities. This determination is based on the information desired, the platform and sensor available, the weather, and the time that the information is desired. A portion of the surveillance effort is reserved for immediate missions.

## Section V. OTHER SURVEILLANCE AND RECONNAISSANCE MISSIONS

### 34. Artillery Adjustments

Requests for adjustment of artillery fire are processed as any other aerial surveillance request. They are coordinated with the G3 Air prior to submission to the ASOC, in order to use, if feasible, close support aircraft operating in the area or to control the adjustment of fire using an artillery forward observer in coordination with the forward controller.

### 35. Other Types of Reconnaissance

Requirements for weather or electronic (ferreting) reconnaissance are processed in the same manner as aerial surveillance requests. Requests for electronic reconnaissance are closely coordinated with the Army Security Agency units operating in the field army area.

## Section VI. PLATFORM AND SENSOR PLANNING CONSIDERATIONS

### 36. General

a. *Capabilities.* A marked difference exists between capabilities of the sensors and the aerial platforms of army aviation units and those of the tactical air force. Organic manned aircraft provide the capability of visual observation, optical imagery, high resolution and side looking radar imagery, and thermal return imagery. Optical imagery is also accomplished from drone aircraft. All types of imagery producing devices are mounted in advanced design experimental drones. Tactical air provides visual observation and optical imagery.

b. *Sensors.* Each sensor operates in a particular portion of the electromagnetic spectrum. Each portion of the spectrum reacts differently to natural phenomena. Visible light photography is hampered during periods of reduced visibility such as rain, heavy clouds, and dark-

ness. Infrared energy is rapidly reduced by heat absorbing characteristics of rain, snow, or hail. Radar can operate through clouds and precipitation with limitations. Capabilities of sensors become an important consideration in their selection (fig. 5). Each sensor is complementary; for instance, optical imagery may find the object, radar may determine movement, and infrared detect heat emissions.

### 37. Optical Imagery

In planning optical imagery missions, the primary considerations include the desired scale and full use of the limited means available.

a. Suggested scales for detailed imagery interpretation are contained in TM 30-245. Factors influencing the choice of scale may include cloud cover and light conditions, the type

|                              |                      | DAY   |          |       |      |      | NIGHT             |                                                    |          |       |      |      |                   |
|------------------------------|----------------------|-------|----------|-------|------|------|-------------------|----------------------------------------------------|----------|-------|------|------|-------------------|
|                              |                      | CLEAR | MOISTURE |       |      | DUST |                   | CLEAR                                              | MOISTURE |       |      | DUST |                   |
|                              |                      |       | Haze     | Claud | Rain | Haze | Cancen-<br>trated |                                                    | Haze     | Claud | Rain | Haze | Cancen-<br>trated |
| VISUAL                       |                      | E     | S-U      | U     | S-U  | S-U  | U                 | V (Artificial<br>light augment<br>ar light search) | S-U      | U     | S-U  | S-U  | U                 |
| PHOTOGRAPHY:                 |                      |       |          |       |      |      |                   |                                                    |          |       |      |      |                   |
| F                            | Panchromatic         | E     | V        | U     | V    | V    | U                 | E-S (Flash ar<br>Flare)                            | U        | U     | U    | U    | U                 |
| I                            |                      |       |          |       |      |      |                   |                                                    |          |       |      |      |                   |
| L                            | Camauflage Detection | E     | V        | U     | V    | V    | U                 | U                                                  | U        | U     | U    | U    | U                 |
| M                            | Calar                | E     | V        | U     | V    | V    | U                 | U                                                  | U        | U     | U    | U    | U                 |
|                              | High Speed           | NA    | NA       | NA    | NA   | NA   | NA                | E-U (limited<br>by ambient<br>light)               | U        | U     | U    | U    | U                 |
| HIGH RESOLUTION RADAR        |                      | E     | S        | S     | V    | S    | U                 | E                                                  | S        | S     | V    | S    | U                 |
| SLAR/MOVING TARGET INDICATOR |                      | S     | S        | S     | V    | S    | U                 | S                                                  | S        | S     | V    | S    | U                 |
| INFRARED                     |                      | S     | S        | S     | V    | P    | U                 | E                                                  | S        | P     | V    | P    | U                 |

Anticipated Results: E - Excellent  
S - Satisfactory  
P - Marginal Use

V - Variable (Effectiveness dependent upan density of haze ar rain)  
U - Unusable  
NA - Nat Applicable

Figure 5. Sensor selection guide.

of platform, camera, lens, and film used, and the air defense capabilities of the enemy.

b. Many requests for optical imagery will be of small areas or isolated points. In order to use the effort most economically, requests are consolidated. The mission is planned so that processing, reproduction, interpretation, and dissemination can be accomplished within the time required. Careful selection of the route to and from the primary target may include other requirements.

### **38. Airborne Radar**

Flight planning for the use of radar sensors considers the characteristics of radar waves. Radar waves do not penetrate heavy foliage or intervening terrain; therefore, the flight lines are planned to provide full coverage. Airborne radar, principally SLAR, produces general intelligence record, with the primary emphasis on indications of moving vehicles. Airborne radar can provide acceptable imagery during periods of darkness and in conditions of light rain, smoke, haze, and dust. Radar may be detected and jammed or spoofed.

### **39. Infrared**

The airborne infrared detectors produce detailed or general intelligence record imagery through the recording of temperature varia-

tions of the terrain and objects on the terrain. By varying the type detector used in the set, either an infrared image of the area being covered or a presentation of points of significant temperature variation may be obtained. This type of sensor is passive in that it does not depend upon detection of its own reflected energy as does radar. It is impossible to jam, but it may be spoofed by heat producing devices. Infrared imagery, like radar, may be produced and used for comparison; or it may be used to locate areas of activity determined by the number and type of heat-producing elements detected. Rain, snow, hail, smoke, dust, and fog will reduce the sensor's ability to detect heat radiations.

### **40. Tracking and Plotting Radar**

To insure rapid and accurate orientation of aerial imagery, all imagery-producing flights should be tracked with at least one of the tracking and plotting radar sets. These sets produce a flight path overlay (par. 57) of the aerial platform and record the starting and stopping points of the sensors. Siting of these sets must consider the line-of-sight characteristic of the radar. It is desirable that the radar sites be integrated into the artillery survey plan and that an orienting line be established at each site.

## **Section VII. OPERATIONAL AIDS**

### **41. General**

The techniques used in planning and controlling aerial surveillance and reconnaissance require the development of operational aids. These vary in scope and complexity depending upon the requirements of the preparing echelons. A listing of operational aids is shown in figure 6.

### **42. Section SOP**

The section SOP establishes administrative procedures (app. IV). It includes the organization, responsibilities and duties of personnel.

### **43. Aerial Surveillance Annex to the Unit Intelligence SOP**

The aerial surveillance annex to the unit intelligence SOP establishes the administrative

procedures for the command. It is initially prepared at field army. Corps and divisions prepare their SOP's in consonance with the guidance furnished by the next higher echelon. There is no prescribed format for this annex.

### **44. G2 Air Situation Map**

The G2 Air situation map covers the command area of interest. It is similar in scope to the G3 situation map, and is kept current by plotting key observations. It is a major planning aid used in developing specific requirements of subordinate commands. Requests, plotted on an overlay, are used to develop the specific requirements by consolidating where feasible and by eliminating duplicated requirements. It is used as a guide to determine the advisability and feasibility of approving immediate missions.

| CLASSIFICATION                                                        | TITLE                                                                                       | USE                                                           | PREPARING ECHELON         |                 |                               |                    |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------|---------------------------|-----------------|-------------------------------|--------------------|
|                                                                       |                                                                                             |                                                               | Field Army                | Corps           | Division                      | Other              |
| Administrative Procedures                                             | Section SOP                                                                                 | Establish section administrative procedures.                  | X                         | X               | X                             | Optional           |
|                                                                       | Aerial Surveillance Annex to Unit Intelligence SOP.                                         | Establish pertinent administrative procedures within command. | X                         | X               | X                             | Optional           |
| Broad Planning Aids                                                   | G2 Air Situation Map                                                                        | Friendly and enemy situation in area of interest.             | X                         | X               | X                             | X                  |
|                                                                       | G2 Air Collection Worksheet                                                                 | Determine broad and specific requirements.                    | X                         | X               | X                             | Optional           |
|                                                                       | Aerial Reconnaissance and Surveillance Appendix to Intelligence Annex of Operations Orders. | Direction to subordinate units.                               | X                         | X               | X                             | Optional           |
|                                                                       | Aerial Surveillance Plan                                                                    | Information to subordinate units.                             | X                         | X               | X                             |                    |
|                                                                       | Route Overlay (TAB A)                                                                       | Prearranged route identification code.                        | X                         |                 |                               |                    |
|                                                                       | Area Overlay (TAB B)                                                                        | Prearranged area identification code.                         | X                         |                 |                               |                    |
|                                                                       | Point Overlay (TAB C)                                                                       | Prearranged point identification code.                        | X                         |                 |                               |                    |
|                                                                       | Change Table                                                                                | Prearranged code changes.                                     | X                         |                 |                               |                    |
|                                                                       | Master Cover Trace                                                                          | Overlay indicating imagery available.                         | X                         | Optional        | X                             |                    |
| Specific Planning and Control Aids in addition to those listed above. | Air Reconnaissance Request Form                                                             | Identifies and requests a specific requirement.               | X                         | X               | X                             | X                  |
|                                                                       | Request Overlay (Flight Plot)                                                               | Graphic supplement to support form for special imagery.       | Optional                  | Optional        | Optional                      | Optional           |
|                                                                       | Aerial Surveillance Log                                                                     | Listing of requests received and action taken.                | X                         | X               | X                             | Optional           |
|                                                                       | Mission Status Board                                                                        | Current reference of approved missions.                       | X                         | X               | X                             |                    |
|                                                                       | Mission Folders                                                                             | Segregation of requests by status of action.                  | X                         | X               | X                             |                    |
| Reports                                                               | Mission Report                                                                              | Information return overlay by mission.                        | X(by ARSB)                |                 | X(by G2 Air Rep)              |                    |
|                                                                       | Pilot Trace                                                                                 | Pilot route overlay by mission.                               | X(by Air Force thru ARSB) |                 | Optional                      |                    |
|                                                                       | Radar Trace                                                                                 | Radar route overlay by mission indicating expected imagery.   | Optional (Manned)         |                 | X(Drone)<br>Optional (Manned) |                    |
|                                                                       | Imagery Interpretation Report                                                               | Intelligence report from imagery interpreters.                | X(by ARSB)                | X(Corps MI Det) |                               | X(Division MI Det) |

Figure 6. Aerial surveillance/reconnaissance operational aids.



#### 45. G2 Air Collection Worksheet

The G2 Air collection worksheet is a direct extension and modification of the G2 collection worksheet. It is an orderly listing of broad requirements for aerial surveillance, from which specific requirements are developed. It is continually revised to meet changing situations (app. III).

#### 46. Aerial Surveillance and Reconnaissance Appendix to Intelligence Annex of Unit Operations Order

The surveillance and reconnaissance appendix to the intelligence annex of the operations order is used to disseminate orders to subordinate commands. Orders are either general or specific dependent upon time and availability of information for planning, and are prepared in either written or overlay form (app. V).

#### 47. Daily Aerial Surveillance Plan

The daily aerial surveillance plan is a listing of approved preplanned missions. It is disseminated to subordinate units to provide information of the time, type, frequency, and purpose of missions.

#### 48. Aerial Surveillance Route, Area, and Point Overlays and Change Tables

*a. General.* Aerial surveillance route, area, and point overlays are prepared and used to rapidly designate preselected routes, areas, and points in aerial surveillance planning and operations. The system is applicable at all echelons. The following explanation is applied to the preparation of overlays at field army.

*b. Concept.* The aerial surveillance and reconnaissance appendix to the intelligence annex

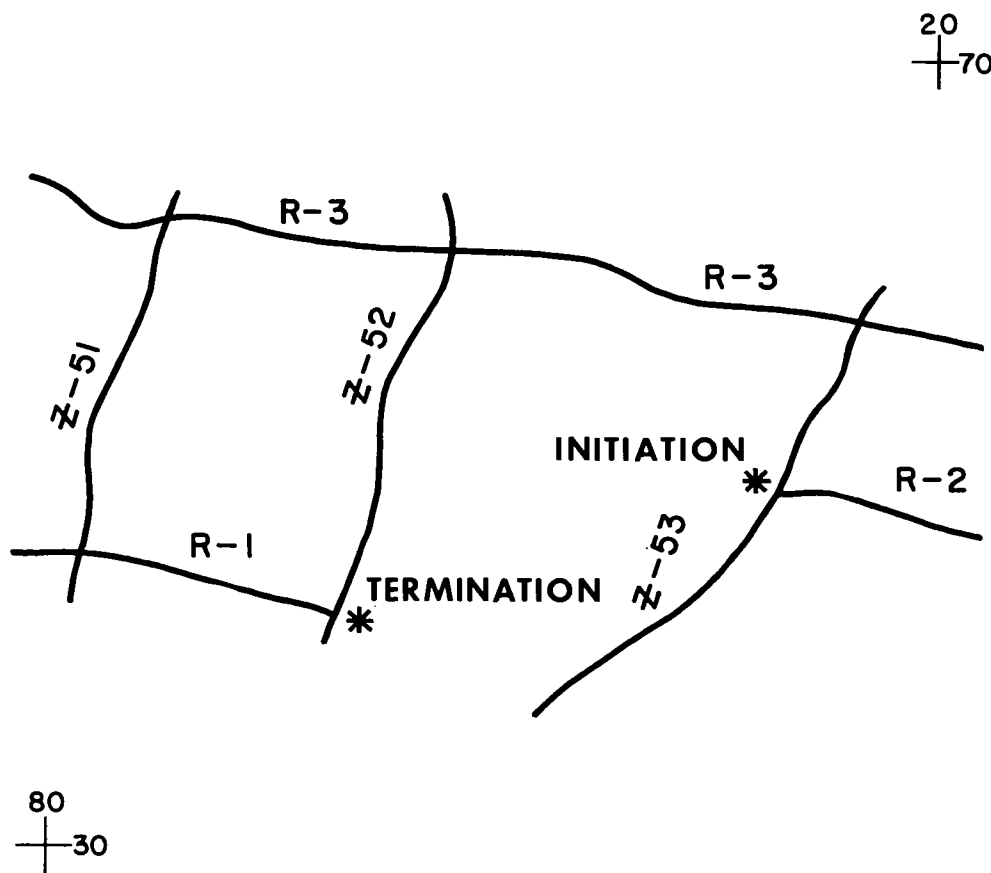


Figure 7. Route overlay (TAB A)—route continuation, axial and lateral route identification.

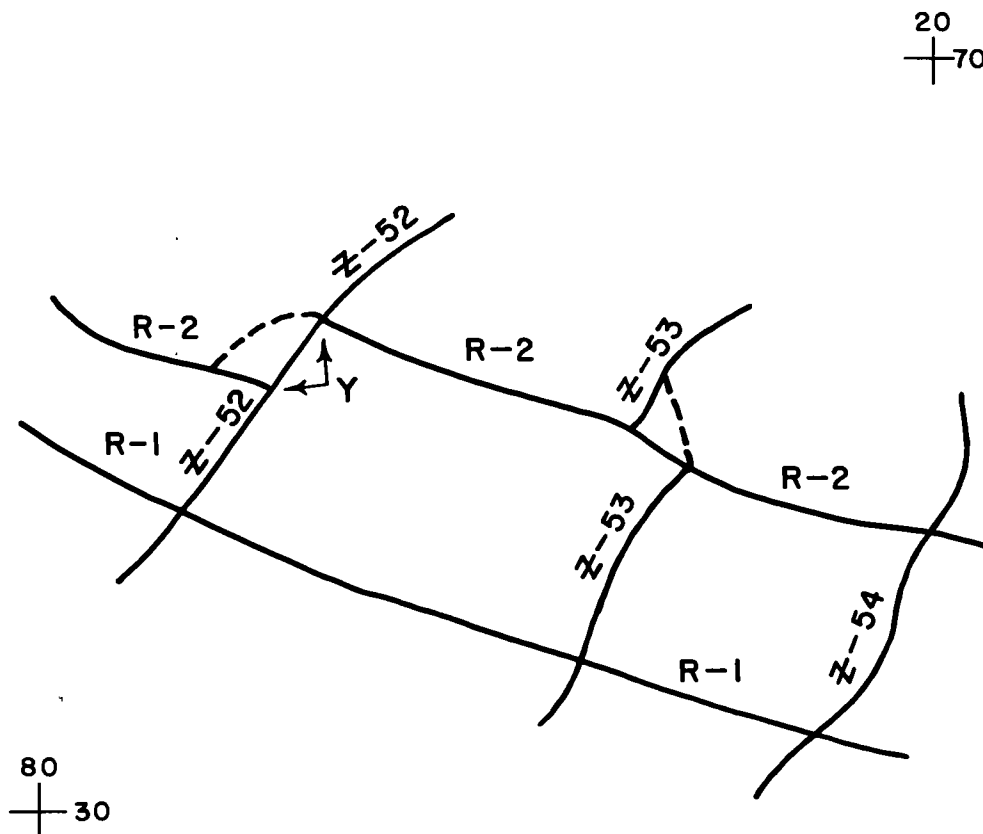


Figure 8. Route overlay (TAB A)—route initiation and termination.

of the field army operations order is supported by route, area, and point (as appropriate) overlays which are identified as TABS A, B, and C respectively. Route (TAB A) and area (TAB B) overlays are always prepared in planning for aerial surveillance. A point overlay (TAB C) is prepared as necessary for locating points of primary interest.

*c. Responsibility.* The field army G2 is responsible for the preparation of route, area, and point overlays. They are coordinated with the ASOC and incorporated into the aerial surveillance appendix. The coordination, preparation and dissemination of overlays is a function of the G2 Air.

*d. Route Overlays.* In the preparation of route overlays, selected primary lateral and axial (pertaining to the axis of advance) routes are drawn which have been determined to be of greatest tactical significance to the field army commander. Selected routes are

identified by the letter R prefix (R-1 to R-50) for the numerical designation of axial routes, and a block of numbers with a Z prefix (Z-51 to Z-100) designates lateral routes (figs. 7 and 8). A selected route may not traverse the entire length or width of the area and, therefore, is terminated unless it can be tied to another route within 16 km. Figure 7 shows route R-1 terminated because of this distance factor. Termination of an R-route, for example, can be avoided by traveling a Z-route for less than 16 km (fig. 8, point Y). When preparing route overlays, select road nets, rail nets, waterway systems, prominent trails, and other features that are recognizable from the air. When route planning is not adaptable to the particular terrain (jungle, arctic, etc.), reliance must be placed solely on search areas.

*e. Area Overlay.* Area overlays are prepared to facilitate detailed visual air search of specific areas. The area of interest of the command is

divided into specific search areas. The size of each area is based upon the projected capability of an airborne observer to visually search the area in one sortie. Factors that affect the capability of the observer are the type of aircraft

used, nature of the terrain, and the intensity of the search desired. Terrain features that are easily recognized from the air are used in defining the limits of search areas. For economy of time and aircraft, search areas should

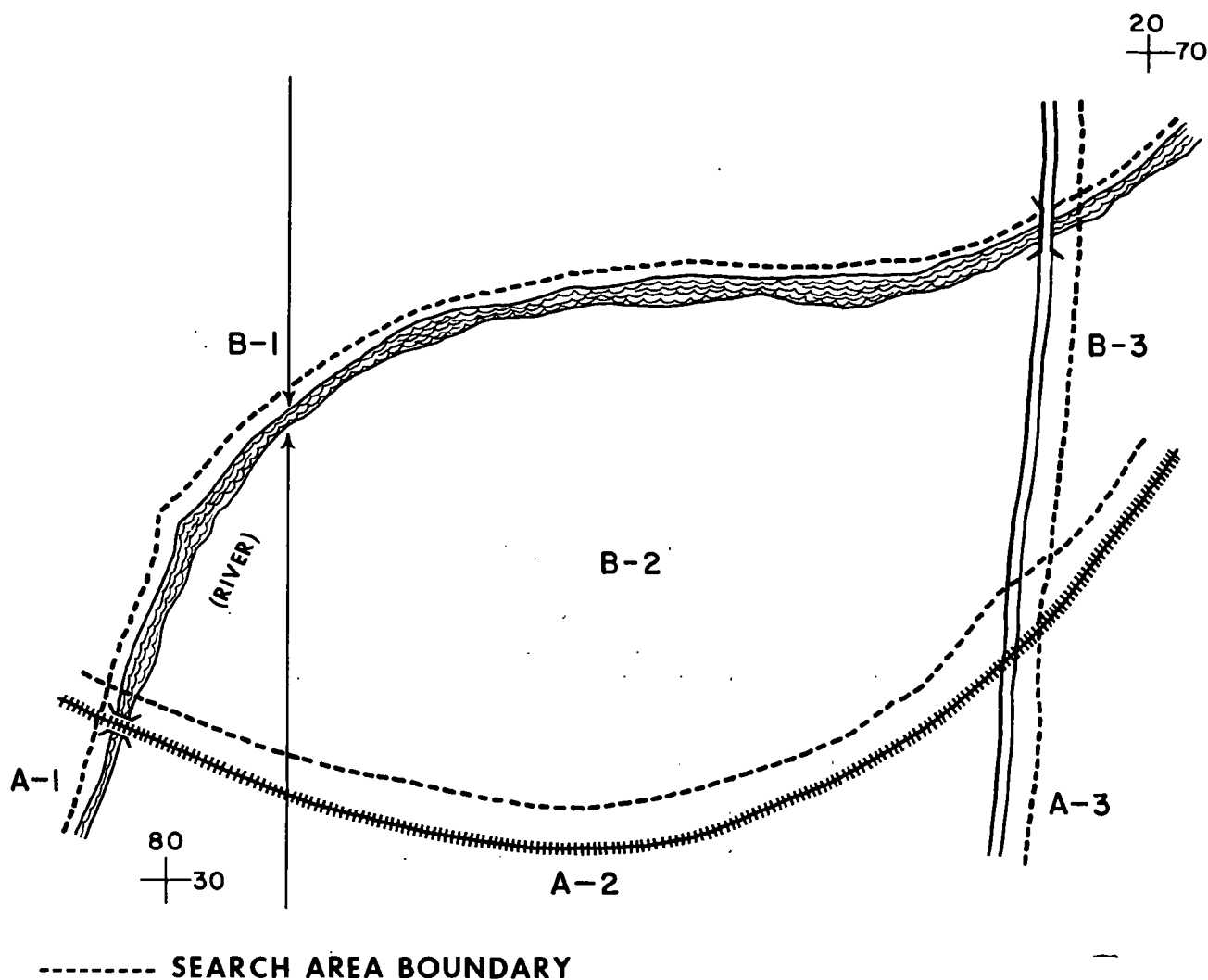
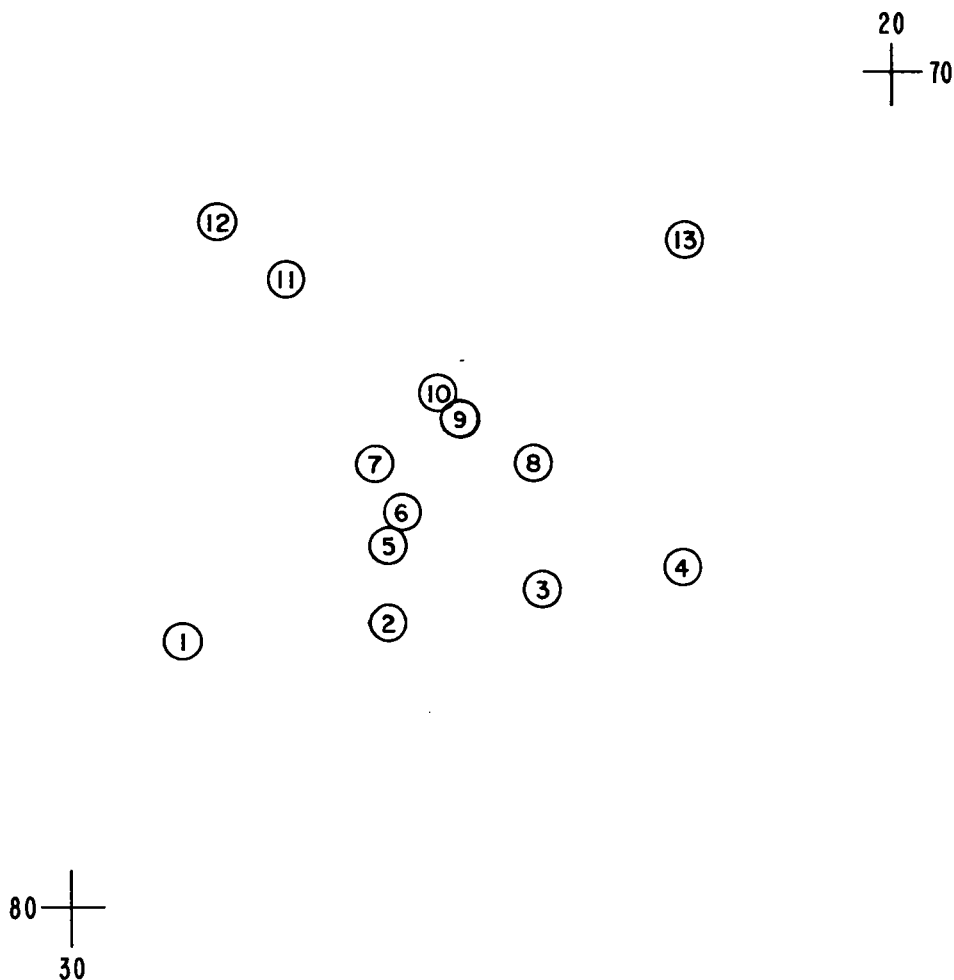


Figure 9. Area overlay (TAB B).



| CONCENTRATION LIST |             |                                  |                      |
|--------------------|-------------|----------------------------------|----------------------|
| Conc. No.          | Coordinates | Description                      | Remarks              |
| 1                  | 43 09       | Power Station & Distr Pt         | Reservoir to N.      |
| 2                  | 65 10       | RR & Highway Bridges             | RR Steel 100'        |
| 3                  | 81 13       | RR & Highway Bridge              | Highway concrete 75' |
| 4                  | 97 16       | RR & Highway Bridges             | RR Steel 100'        |
| 5                  | 66 19       | Warehousing                      | Highway concrete 90' |
| 6                  | 67 22       | 6 Barracks 25' x 200'            | RR Steel 200'        |
| 7                  | 64 28       | Chemical Plant - Cool Tar        | Highway Steel 200'   |
| 8                  | 81 28       | Mil Ord Storage Yard             | 9 ea 200' x 400'     |
| 9                  | 73 32       | Tank Assembly Plant              | 80% Damaged          |
| 10                 | 72 34       | 12 Barracks & Parade Ground      | 150' long            |
| 11                 | 55 48       | Highway Bridge, 2 lane, Concrete |                      |
| 12                 | 48 54       | Lumber Mill                      |                      |
| 13                 | 98 52       | Military - Moint Shops           |                      |

Figure 10. Point overlay (TAB C).

be oblong in shape allowing a minimum number of "passes" to obtain complete coverage (fig. 9). Personnel in reconnaissance aircraft of the tactical air force can visually search an 800 sq km to 5200 sq km area depending on the configuration of the terrain. In average terrain, a planning factor of 2400 sq km is used. In preparing area overlays, the G2 Air places emphasis for surveillance on secondary routes and those primary routes not used in preparation of route overlays. The letters of the alphabet, with the exception of I, O, R, and Z, are used as prefixes to the numerical designations applied to search areas (fig. 9). When the area of interest has been subdivided into search areas, those nearest the line of contact are given the prefix A followed by a number; the next row of areas are given the prefix B followed by a number. This system is continued until the selected areas have been identified with a letter and number.

*f. Point Overlays.* The point overlay is prepared by the G2 Air in response to requirements of the G2 Targets Officer/SIRA. In preparing the point overlay, the G2 Air selects key points of immediate or future probable intelligence interest that are vulnerable to pinpoint photography or rapid visual observation. A pinpoint representing a coordinate, surrounded by a circle with a numerical identification, is plotted on the point overlay (fig. 10).

*g. Base Plans.* All three overlays, (TABS A, B, and C) are prepared prior to operations and are referred to as base plans. The route, area, and point numerical designations are referred to as base plan index numbers. The G2 Air prepares change tables which will be used to change the base plan index numbers at any time because of compromise or when deemed necessary by the commander. The base plan itself is unclassified. The change table for

| CLASSIFICATION |                 |
|----------------|-----------------|
| Tab A (Routes) |                 |
| Index No.      | Operational No. |
| R-1            | R-3             |
| R-2            | R-1             |
| R-3            | R-2             |
| R-4            | R-6             |
| Z-51           | Z-56            |
| Z-52           | Z-58            |
| Tab B (Areas)  |                 |
| A-1            | Y-2             |
| A-2            | Y-5             |
| A-3            | Y-1             |
| B-1            | M-3             |
| B-2            | M-1             |
| B-3            | M-2             |
| Tab C (Points) |                 |
| 1              | 10              |
| 2              | 11              |
| 3              | 12              |

Figure 11. Base plan index change table.

(Security Classification)

FROM: CG, 45th U.S. Inf Div

TO: CG, Seventh U.S. Army

AIR RECONNAISSANCE REQUEST

L. ORIGINATOR'S SERIAL NUMBER: 45th Div - 278

M. TYPE OF RECONNAISSANCE: Photo, Vertical.

N. NATIONAL MAP SERIES AND SHEET NUMBER: AMS 4873

O. DESCRIPTION OF TARGET AND MAP REFERENCES:

Area, NB 637485 - NB 637513 - NB 653156 - NB 655490

P. OBJECT OF THE REQUEST AND RESULTS DESIRED:

Size of unit in BIVOUAC.

Movement or indications, if any.

Type tanks, SP guns.

Q. PHOTO SCALE OR LIMITS ACCEPTABLE: 1:10000 or larger.

R. NUMBER OF PRINTS, PLOTS OR REPORTS REQUIRED: None.

S. DELIVERY ADDRESS, DATE, TIME: N/A

T. LATEST ACCEPTABLE TIME AND DATE: 171600 March

U. SPECIAL INSTRUCTIONS:

Confirm armored unit in vic. Information required ASAP.

Priority I, SPOT(HOT Reports, NATO) . IMMEDIATE REQUEST

\_\_\_\_\_  
Signature of Requesting Officer

\_\_\_\_\_  
Signature of Approving Officer

\_\_\_\_\_  
Grade, Position

\_\_\_\_\_  
Grade, Position

*Figure 12. Air reconnaissance request (front).*

**NOTE:** The letters A to K have special significance for certain organizations, and are purposely omitted from the request.

- L. ORIGINATOR'S SERIAL NUMBER.** Each request will be given a serial number consisting of a prefix followed by a number commencing with number 1 at the beginning of the year. Further requests will be numbered consecutively throughout the year. Prefixes will be the Headquarters demanding e.g., LANDCENT, AFCENT, AFNORTH, 4ATF.
- M. TYPE OF RECONNAISSANCE.** For example: visual, electronic, weather, fire control or photographic reconnaissance (vertical, oblique or reprint photography). This paragraph should be left blank unless it is understood fully what the selected type of reconnaissance can accomplish.
- N. NATIONAL MAP SERIES AND SHEET NUMBER.** Owing to the large variety of maps used both in training and operations by nations, these details must be given in full.
- O. DESCRIPTION OF TARGET AND MAP REFERENCE.** So as to leave the recipient of the request in no doubt as to the requirements, it is necessary to give an exact location, e.g., railway bridge 775386. In the case of oblique, the NEAR boundary of the area to be photographed will be given. If GRID reference is used, state GRID type, i.e., UTM, GEOREF, etc., otherwise state latitude and longitude to the nearest minute.
- P. PURPOSE OF REQUEST AND RESULTS DESIRED.** It is important that the exact purpose of the request is stated, in order that the most satisfactory results may be produced.
- Q. PHOTOSCALE OR SCALE LIMITS ACCEPTABLE.** Whenever possible, this heading should be filled in on the advice of a photographic interpreter. The scale should be quoted in figures, e.g., 1/10000.
- R. NUMBER OF PRINTS, PLOTS OR REPORTS REQUIRED.** This should never exceed the number actually required. If a photo interpretation report will suffice, prints should not be ordered.
- S. DELIVERY ADDRESS-DATE TIME.** State clearly where the prints, plots or reports are to be delivered and the time and date on which they are required. If there is no haste, as much time as possible should be given for final delivery, so as to allow requests of a more urgent nature to be dealt with.
- T. LATEST ACCEPTABLE TIME-DATE.** The date and/or time after which the prints, plots or reports are no longer required. If delivery cannot be made by the date stated, the request will be cancelled.
- U. SPECIAL INSTRUCTIONS.** The degree of urgency, or when making more than one request, the degree of priority, and the security classification of the material requested. Note whether first, second or third phase photointerpretation is desired from the photographs. Give any instructions or information not already provided, that will aid the planning, or successful accomplishment of the mission.

*Figure 13. Air reconnaissance request (back).*

the base plans is classified. An example of a change table is shown in figure 11.

#### **49. Master Cover Trace**

A master cover trace is an overlay showing the imagery available at an echelon of command or an image interpretation detachment. It is used as a guide in preventing unnecessary duplication of imagery coverage.

#### **50. Air Reconnaissance Request**

a. The air reconnaissance request (figs. 12 and 13) is the means by which each specific request for aerial surveillance or aerial reconnaissance is submitted and acted upon. It provides a means of recording sufficient information to locate and identify the area of interest and the specific information desired from the

mission. The request may be prepared at any echelon and is used for both immediate and preplanned missions. The G2 Air or S2 Air is charged with the responsibility for placing the requirement in the aerial surveillance cycle for appropriate action. The back of the request

provides instructions for completing the request.

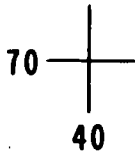
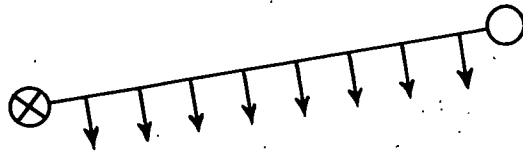
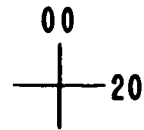
b. An administrative control sheet for processing the air reconnaissance request at field army is necessary due to the coordination involved (fig. 14). Modifications of the ad-

| G2 AIR ACTION                                                              | AVIATION OPERATIONS                                                      |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------|
| Received at <u>Seventh Army 17 0900</u><br>(Unit-Date-Time)                | Received at ASOC <u>17 0917</u><br>(Date-Time)                           |
| By <u>HB</u> Location Checked <u>HB 17 0910</u><br>(Init) (Init-Date-Time) | By <u>K</u> Location Checked <u>K 17 0920</u><br>(Init) (Init-Date-Time) |
| Coordinated: Arty Air Def Avn _____<br>(Init)                              | Approved/Disapproved <u>HB 17 0915</u><br>(Init-Date-Time)               |
| Approved/Disapproved <u>HB 17 0195</u><br>(Init-Date-Time)                 | Reason for disapproval _____                                             |
| Reason for disapproval _____                                               |                                                                          |
| Fwd to <u>ASOC</u> By <u>HB 17 0916</u><br>(Init-Date-Time)                |                                                                          |
| Requesting Unit Notified <u>MT 17 0930</u><br>(Init-Date-Time)             | Return to Army <u>17 0922</u> By <u>SR</u><br>(Date-Time) (Init)         |
| ARSB notified <u>MT 17 0925</u><br>(Init-Date-Time)                        | Diverted in Flight Mission _____                                         |
| Additional _____<br>(Unit) (No per neg)                                    | <u>10 TRS 8130</u>                                                       |
| Print _____                                                                |                                                                          |
| Distr _____<br>(Unit) (No per neg)                                         |                                                                          |
| AIR MISSION DATA                                                           |                                                                          |
| 1 Mission No <u>10 TRS 8130</u>                                            | Army Mission Req No <u>30-17 (P 149)</u>                                 |
| 2 Accomplishing Org <u>10 TRS</u>                                          | Notified <u>K 17 0925</u><br>(Init-Date-Time)                            |
| 3 Unit Call Sign <u>Bluebird 25 (36.7 MC)</u>                              |                                                                          |
| 4 No & Type Aircraft <u>2 - RF 101</u>                                     | Priority <u>I</u>                                                        |
| 5 TOT <u>0940</u>                                                          |                                                                          |
| 6 Control Info <u>Spot Reports to "Snipe" (39.0 MC)</u>                    |                                                                          |
| 7 Army Mission Data _____                                                  |                                                                          |
| 8 SCC notified <u>K 17 0923</u><br>(Init-Date-Time)                        |                                                                          |
| 9 Other coordination _____<br>(ALO) (TDP)                                  |                                                                          |

Figure 14. Administrative control sheet, field army.







#### OBLIQUE PHOTO REQUEST OVERLAY

Mop: GERMANY, 1:100000

AMS series M461

Sheet W 5, AUGSBURG

Mission: 5

Flight Altitude: 5860' AMSL

Comero ongle: 30°

Flight Azimuth: 260°

Photo Scale: N/A

Wind oloft: none predicted

Set comero intervalometer to true ground  
speed for control

#### LEGEND

Comero stort

Comero stop

Prepared by: \_\_\_\_\_ Div. Imagery  
Interpretation Section

Figure 16. Oblique photo request overlay.

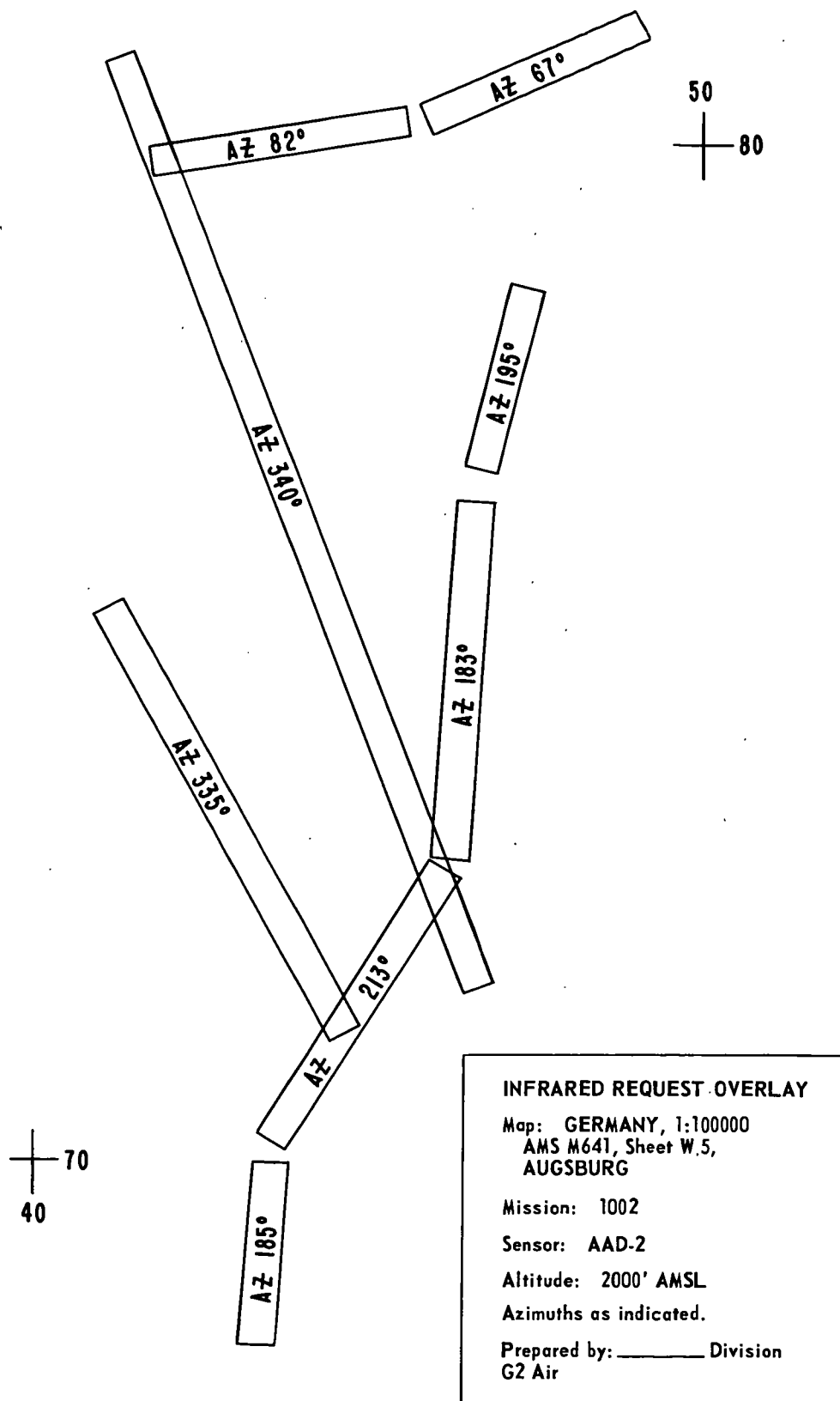
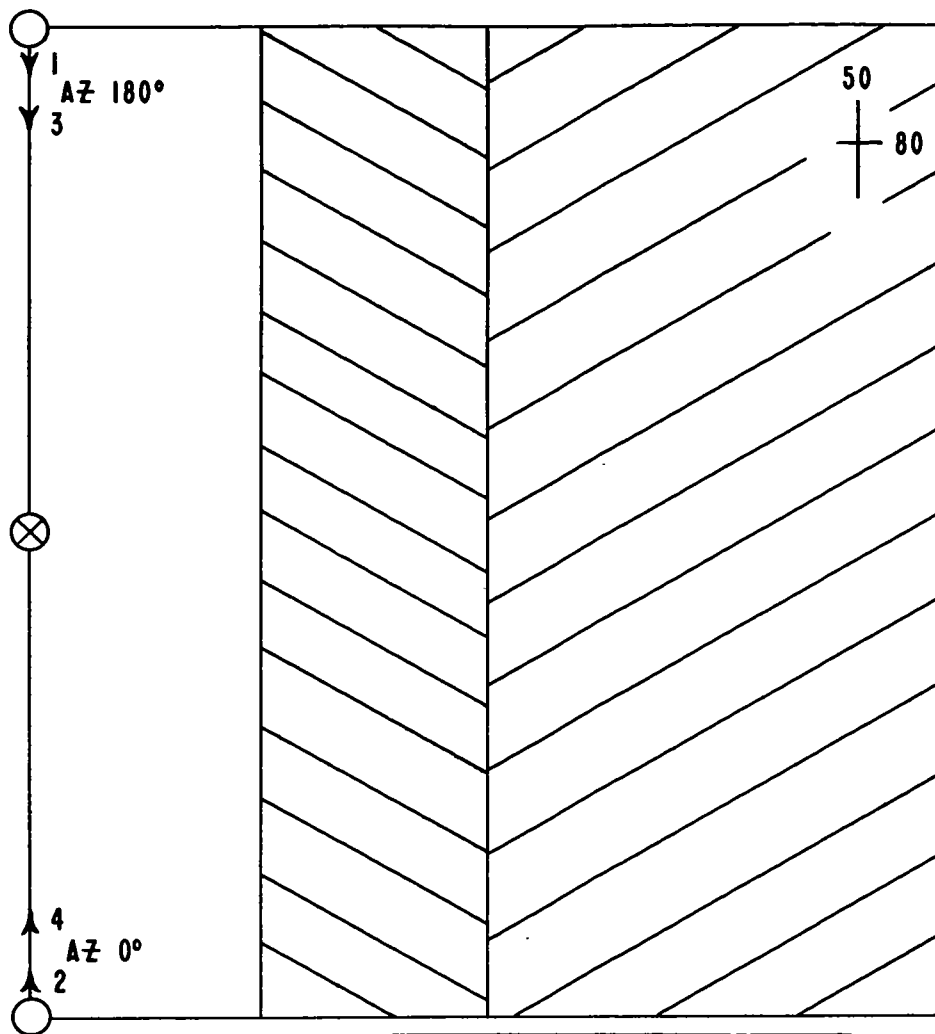


Figure 17. Infrared request overlay.



70  
30

| SLAR REQUEST OVERLAY                                                        |                  |                  |                    |
|-----------------------------------------------------------------------------|------------------|------------------|--------------------|
| Mop: GERMANY, 1:100000, AMS M641, Sheet W 5<br>AUGSBURG                     |                  |                  |                    |
| Mission: 59                                                                 |                  |                  |                    |
| Sensor: SLAR                                                                |                  |                  |                    |
| Flight Data:                                                                | RANGE<br>SETTING | DELAY<br>SETTING | FLIGHT<br>ALTITUDE |
| 1&2                                                                         | 7.5Km            | 7.5Km            | 8500'              |
| 3&4                                                                         | 15 Km            | 15 Km            | 8500'              |
| LEGEND                                                                      |                  |                  |                    |
| At make 360° turn, change plates in comero, continue on course.             |                  |                  |                    |
| At make 180° turn, change plates in comero, and return on course indicated. |                  |                  |                    |
| \\\\ - 7.5 Km coverage.                                                     |                  |                  |                    |
| //// - 15 Km coverage.                                                      |                  |                  |                    |
| Prepared by: _____ Division G2 Air.                                         |                  |                  |                    |

Figure 18. SLAR request overlay.

*Figure 19. Field army surveillance log.*

ministrative control sheet may be used at subordinate echelons to conform with unit SOP.

## 51. Request Overlay

A request overlay is an optional graphic augmentation to the aerial surveillance request. It indicates the image taking technique required to satisfy a special requirement, e. g., the angle and direction from which an oblique photograph must be taken.

## 52. Aerial Surveillance Log

An aerial surveillance log is maintained by each G2 Air section. Sample formats shown in figures 19 and 20 may be amended to meet special unit requirements.

## 53. Mission Status Board

A mission status board reflects the status of preplanned and immediate missions. Information about each mission is filled in as it becomes available. It assists the G2 Air in following the conduct of each mission and is a base from which to initiate changes in plans caused by changing situations. Each echelon maintaining a mission status board may use the format that best suits their needs. Examples of mission status boards are shown in figures 21 and 22.

## 54. Mission Folders

Mission folders assist the G2 Air by segregating requests by status of action. The following folders are maintained:

- Disapproved.
- Approved.
- Completed.
- Aborted.

## 55. Mission Report

See chapter 9.

## 56. Pilot Trace

A pilot trace is an overlay showing the pilot's concept of course flown and point at which imagery was exposed. It is used to assist in correlating the resultant imagery and the terrain.

## 57. Radar Trace

A radar trace made by the tracking and plotting radar shows the route of an aerial vehicle and points from which imagery was exposed. It is also used to correlate imagery and terrain.

## 58. Image Interpretation Reports

Image interpretation reports are explained in chapter 8 and appendix VI.

### 45 DIVISION AERIAL SURVEILLANCE LOG

PERIOD 170000 - 172400

| LOG NR. |       | UNIT REQUEST |             |           | ARMY NR. |      | PRIORITY | TIME NO LONGER OF VALUE | VISUAL    |           |         | PHOTO      |           |         | INFRARED  |           |         | RADAR    |           |         | DRONE-PHOTO |           |             | DISPOSITION |       |          |           |              |  |                 |  |  |  | REMARKS |  |  |  |
|---------|-------|--------------|-------------|-----------|----------|------|----------|-------------------------|-----------|-----------|---------|------------|-----------|---------|-----------|-----------|---------|----------|-----------|---------|-------------|-----------|-------------|-------------|-------|----------|-----------|--------------|--|-----------------|--|--|--|---------|--|--|--|
|         |       |              |             |           |          |      |          |                         | AVAILABLE |           |         | PREPLANNED |           |         | IMMEDIATE |           |         |          |           |         |             |           |             |             |       |          |           |              |  |                 |  |  |  |         |  |  |  |
|         |       |              |             |           |          |      |          |                         | REQUIRED  | ALLOCATED | BALANCE | REQUIRED   | ALLOCATED | BALANCE | REQUIRED  | ALLOCATED | BALANCE | REQUIRED | ALLOCATED | BALANCE | REQUIRED    | ALLOCATED | BALANCE     |             |       |          |           |              |  |                 |  |  |  |         |  |  |  |
|         |       |              |             |           |          |      |          |                         | REQUIRED  | ALLOCATED | BALANCE | REQUIRED   | ALLOCATED | BALANCE | REQUIRED  | ALLOCATED | BALANCE | REQUIRED | ALLOCATED | BALANCE | REQUIRED    | ALLOCATED | BALANCE     |             |       |          |           |              |  |                 |  |  |  |         |  |  |  |
| Type    | MONTH | REQ NR       | PRE-PLANNED | IMMEDIATE |          |      |          |                         |           |           |         |            |           |         |           |           |         |          |           |         |             |           | DISAPPROVED | FWD TO      | ABORT | DIVERTED | COMPLETED | DISSEMINATED |  |                 |  |  |  |         |  |  |  |
|         |       |              |             |           |          |      |          |                         |           |           |         |            |           |         |           |           |         |          |           |         |             |           | HighHq      | Avn O       |       |          |           |              |  |                 |  |  |  |         |  |  |  |
| 1       | V     | 7            | A1          | 1-17      |          | II   | 170630   | 3                       | 3         | 42        |         |            |           |         |           |           |         |          |           |         |             |           |             | X           |       |          | X         | X            |  | SECTOR SEARCH   |  |  |  |         |  |  |  |
| 2       | V     | 7            | 851         | 2-17      |          | IIA  | 170      | 2                       | 1         | 41        |         |            |           |         |           |           |         |          |           |         |             |           |             | X           |       |          | X         | X            |  | 1-2-3-157 LIGHT |  |  |  |         |  |  |  |
| 3       | S     | 7            | A2          | 3-17      |          | II   | 170730   |                         |           |           |         |            |           |         |           |           | 1       | 1        | 5         |         |             |           |             | X           |       |          | X         | X            |  | 3 SPOT REPORTS  |  |  |  |         |  |  |  |
| 4       | S     | 7            | A3          | 4-17      |          | II   | 170730   |                         |           |           |         |            |           |         |           |           | 1       | 1        | 4         |         |             |           |             | X           |       |          | X         | X            |  |                 |  |  |  |         |  |  |  |
| 5       | P     | 7            | 852         | 5-17      |          | IIA  | 171100   |                         |           |           | 1       | 1          | 19        |         |           |           |         |          |           |         |             |           |             | X           |       |          | X         | X            |  |                 |  |  |  |         |  |  |  |
| 6       | P     | 7            | 841         |           | 6-17     | II B | 17.      |                         |           |           |         |            |           |         |           |           |         |          |           |         |             |           |             | X           |       |          | X         | X            |  | AF #23 TRS 7916 |  |  |  |         |  |  |  |
| 7       | D     | 7            | 84          | 7-17      |          | II B | 171100   |                         |           |           |         |            |           |         |           |           |         |          | 1         | 1       | 35          |           |             | X           |       |          | X         | X            |  |                 |  |  |  |         |  |  |  |

Figure 20. Division surveillance log.

MISSION STATUS BOARD

| Air Force<br>Mission Number | Nr of<br>Aircraft | Take Off<br>Time | TOT  | Time<br>Down | Mission<br>Photo/Visual | Area<br>Route | Coll<br>Sign     | Remarks                    |
|-----------------------------|-------------------|------------------|------|--------------|-------------------------|---------------|------------------|----------------------------|
| 10 TRS 121                  | 1                 | 0005             | 0110 | 0135         | V/P                     | R1-6          | SNOOPER<br>RED 1 | COMPLETED - 2 SPOT REPORTS |
| 10 TRS 122                  | 2                 | 0535             | 0630 | 0715         | V/P                     | R3-5          | SNOOPER<br>RED 4 | ABORTED / WA AT TGT        |
| 10 TRS 126                  | 1                 | 2200             | 2230 | 2315         | V/P                     | R7-9          | SNOOPER<br>RED 3 | NIGHT                      |
| 10 TRS 123                  | 2                 | 0620             | 0700 | 0745         | V/P                     | A-8           | BLUE<br>JAYS     | IN AIR                     |

Figure 21. Field army mission status board.

MISSION STATUS BOARD

| MISSION NUMBER        | RADIO         |           | TIME        |      |      | Type | Area, Route,<br>Point              | Remarks                                                                                  |
|-----------------------|---------------|-----------|-------------|------|------|------|------------------------------------|------------------------------------------------------------------------------------------|
|                       | Coll Sign     | Frequency | Take<br>Off | TOT  | Land |      |                                    |                                                                                          |
| 45-1-7                | HAMMER 4      | 27.8/26.4 | 0610        | 0630 | 0700 | V/P  | R6-Z50-R3                          | (MORNING FOG IS<br>FORECAST FOR THIS AREA)<br>SPOT REPORTS OF ARMOR<br>REQUESTED<br>SD-1 |
| 45-2-7                | HAMMER 11     | 27.8/26.4 | 0630        | 0645 | 0730 | IR   | A3(SOUTH 1/2 B3)                   |                                                                                          |
| 45-3-7<br>(10 TRS-53) | SNOOPER RED 1 | 36.5/32.0 | 0640        | 0700 | 0820 | V/P  | R7-Z51-R1                          |                                                                                          |
| 45-4-7                | —             | —         | 1000        | 1015 | 1045 | D    | A5(NW 1/4 B5)                      |                                                                                          |
| 45-5-7                | HAMMER 7      | 27.8/26.4 | 1200        | 1300 | 1300 | SLAR | DIV FRONT<br>(7.5 KM AND<br>15 KM) |                                                                                          |

Figure 22. Division mission status board.

## **Section VIII. COORDINATION**

### **59. General**

The G2 Air coordinates the aerial surveillance effort with those agencies and elements having an effect on or which are affected by the collection of intelligence through aerial means. This coordination is necessary for the efficient accomplishment of the aerial surveillance intelligence cycle, from the development of requirements to the dissemination of the intelligence produced. Coordination is affected with the general and special staff sections of the command and with the G2 Air sections at higher, lower and adjacent headquarters as well as elements that accomplish operational functions within the cycle.

### **60. Field Army**

The field army G2 Air works closely with the staff sections within the headquarters such as engineer, artillery, aviation, chemical, signal, air defense and transportation. Close co-

ordination is conducted with ASOC, MI Battalion (ARS), and the MI Battalion for both long-range and day-to-day planning.

### **61. Corps and Division**

Both the corps and the division G2 Air coordinate in a manner similar to the field army G2 Air; however, such coordination is reduced in scope. Examples of corps coordination are: the corps engineer reference mapping photography requirements or photomap reproduction, or the corps artillery section on target and damage assessment information, or the corps signal officer regarding communications or photographic laboratory operations. At division, coordination is effected with the division aviation officer regarding the availability of aerial sensors, with the division signal officer regarding communications or photographic reproduction, or with the FSCC regarding damage assessment missions.



## COMMUNICATIONS

## 62. General

The signal officer at each tactical headquarters (army, corps, and division) must insure that adequate communication facilities are provided to rapidly transmit requests for aerial surveillance missions, and to disseminate the information produced by these missions. The force signal officer establishes radio nets between requesting and receiving echelons. These include the division air request, army information, and air reconnaissance liaison officer nets. In order to insure that alternate means of communication are available, point-to-point circuits are established using the area communication system.

### 63. Division Air Request Nets

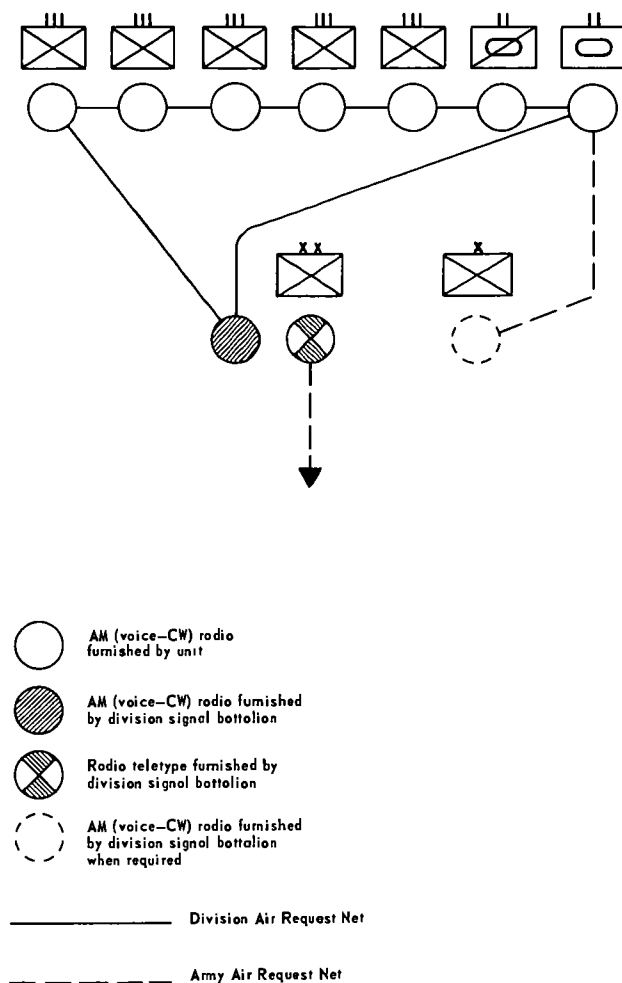
Division air request nets are established in all types of divisions and are shared by G2 Air and G3 Air.

a. In the infantry division this net consists of AM (voice-CW) radios located at the division headquarters, each battle group, armor battalion, and armored cavalry squadron (fig. 23). The net control station is operated by the command operations company of the division signal battalion and has a terminal at the TASE of the DTOC. When the brigade headquarters is in operational control of a portion of the division, provision must be made for a radio to operate in this net.

b. In the armor division, the air request net consists of AM (voice-CW) radios at division headquarters, combat command headquarters, each armor and armored infantry battalion, and the armored cavalry squadron (fig. 24). As in the infantry division, the net control station is operated by the command operations company of the division signal battalion and terminates at the TASE of the DTOC.

c. In the airborne division, the air request net consists of FM voice radios at the TASE of

the DTOC, and at each battle group. The net control station is furnished and operated by personnel from division artillery headquarters. All other radio stations in the net are operated by the headquarters company of the respective echelon.



**Figure 23. Air request communications, infantry division.**

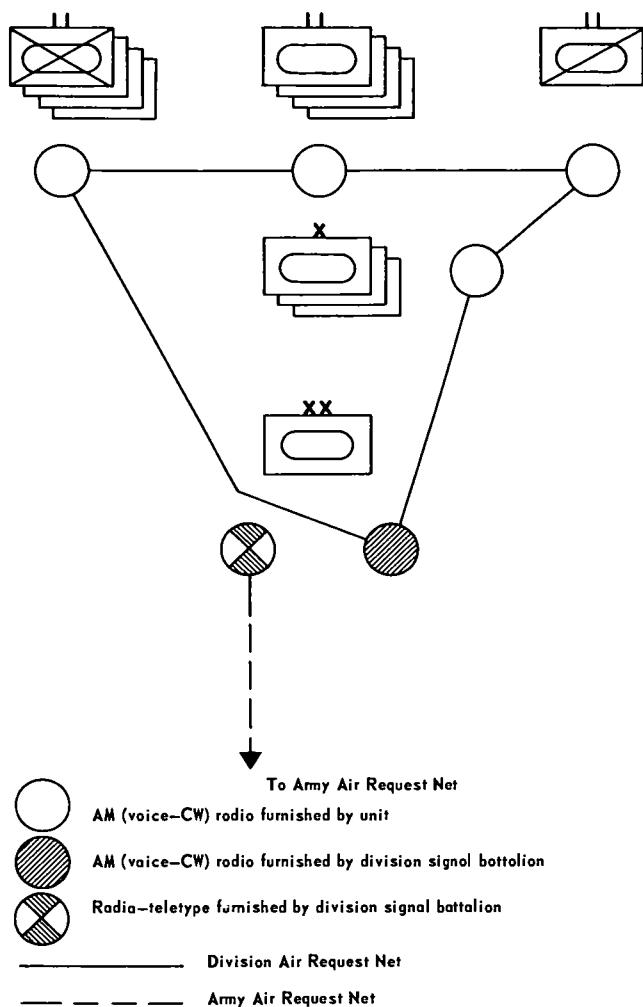


Figure 24. Air request communications, armor division.

#### 64. Army Air Request Net

The army air request net provides AM (voice, CW or RATT) communication with integral security equipment between divisions, armored cavalry regiment, corps and the field army (fig. 25). This net is used jointly by the G2 Air and G3 Air personnel to submit close air support and air reconnaissance requests from lower to higher headquarters. There are as many army air request nets as there are corps in the field army. The stations of the net have their terminals in the TOC at each echelon. These stations are provided and operated by the signal battalion at each level except the armored cavalry regiment, where they are operated by the regimental headquarters troop. The net control stations are at the FATOC.

#### 65. Army Information Net

The army information net provides AM (voice, CW and RATT) communication with integral security equipment between the FATOC, and the MI Bn (ARS), and each corps of the field army (fig. 25). The net control station is at the MI Battalion (ARS). Corps stations in this net are furnished and operated by the corps signal battalion. This net is used for the dissemination of information from the MI Battalion (ARS) to the field army and the corps.

#### 66. Air Reconnaissance Liaison Officer Net

The air reconnaissance liaison officer net provides AM (voice, CW and RATT) communication between the headquarters of the MI Battalion (ARS) and the ARLO of the tactical air force reconnaissance squadrons (fig. 25). It is used to furnish information to the ARLO and for the flow of information to the MI Battalion (ARS) for dissemination to the field army.

#### 67. Spot Report Receiver Systems

For the rapid dissemination of information obtained by missions flown by the tactical air force, UHF radios are located at battle group, armor battalion, armored cavalry squadron, armored infantry battalion, and division headquarters of the infantry and armor division, corps, and field army headquarters. The radios monitor the in-flight spot reports of the pilot. The same capability exists at the headquarters of the airborne division and the regimental and squadron headquarters of the armored cavalry regiment. Pilot transmissions are monitored by the ground stations, and no acknowledging receipt is broadcast. To insure complete dissemination of information obtained in this manner, the unit SOP should specify that these messages will be rebroadcast over the division warning broadcast net (AM, voice) or over the division intelligence net (RATT).

#### 68. Other Communication Systems

a. Maximum use is made of the area communications systems for items of a routine nature as well as for operational traffic. During displacement of the TOC, provision must be made to share other radio or radio-teletype-writer nets to insure that a means exists to

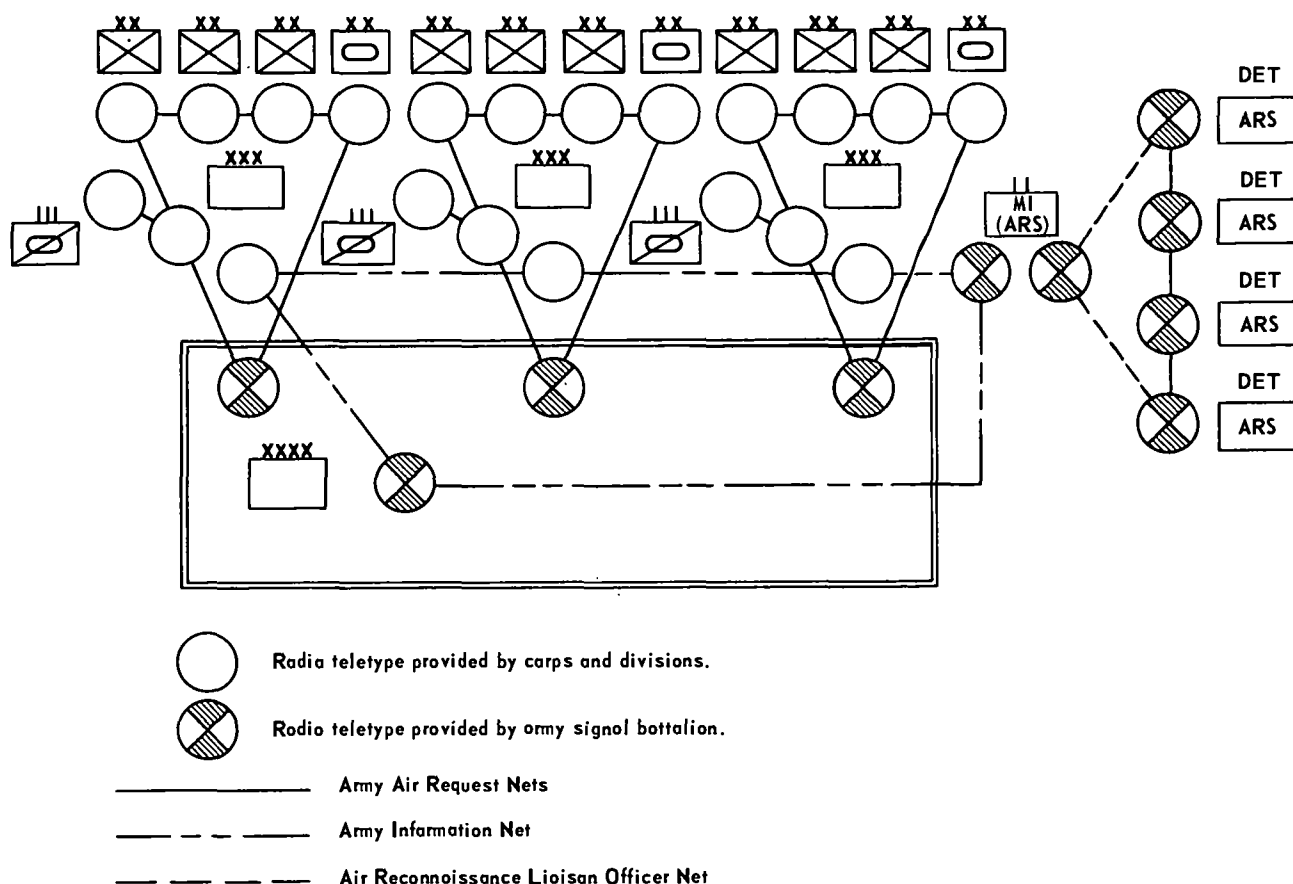


Figure 25. Army air request, army information and air reconnaissance liaison officer nets.

submit immediate requests to higher headquarters.

b. No system or net is provided for the dissemination of information from corps to its subordinate elements; therefore, the corps G2 Air disseminates information received from field army by use of the command, or operation or intelligence nets, or through the use of the area communication system.

c. Communications available between the FATOC and the MI Battalion (ARS) are the army information net, telephone, and supplementing messenger service.

d. When missile commands support allied units, provisions must be made to augment communications to provide a rapid means of requesting and disseminating air surveillance information.

e. All army aircraft are equipped with FM radios capable of communicating with the tactical radios of the ground elements. This provides a means of disseminating information of immediate tactical significance to the user. Procedures and radio nets to be used must be prearranged and coordinated with the pilot and observer at the preflight briefing.

## CHAPTER 7

### MILITARY INTELLIGENCE BATTALION (AIR RECONNAISSANCE SUPPORT)

#### Section I. MISSION AND ORGANIZATION

##### 69. Mission

a. The mission of the military intelligence battalion (air reconnaissance support) is to produce and disseminate all available information and intelligence obtained or developed from tactical air force reconnaissance units operating in support of the field army, and to maintain liaison between the field army and supporting tactical air force units.

b. One battalion normally supports a field army or independent corps. The field army G2

Air is responsible to the G2 for coordination of operations of the MI Battalion (ARS).

##### 70. Organization

The MI battalion (ARS) is organized with a headquarters and headquarters company to provide the necessary operational control, administration, and logistical support of the battalion. Included in the headquarters company is a delivery platoon for aerial and ground delivery of imagery and reports. The remainder

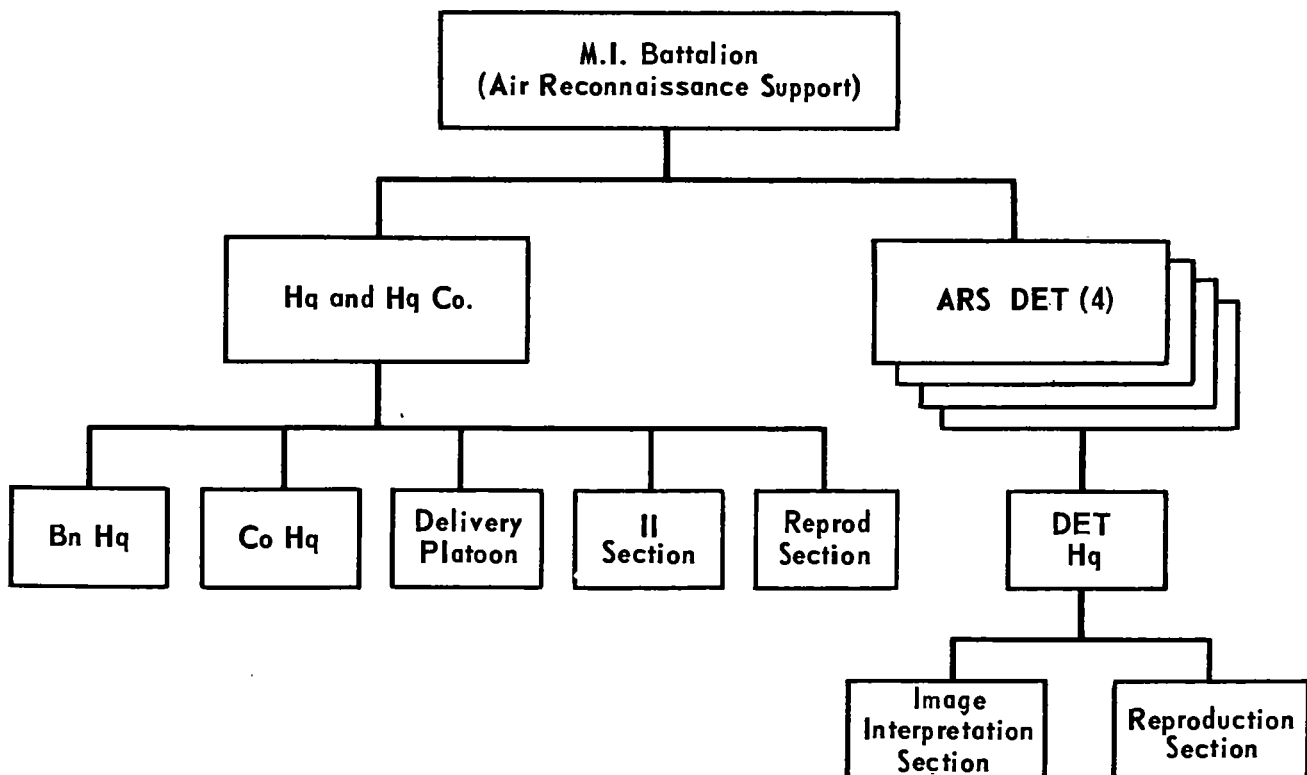


Figure 26. Organization of MI battalion (air reconnaissance support).

of the battalion is organized to permit the establishment of liaison, reproduction, and interpretation facilities at widely separated

locations. However, these elements are not self-sufficient and must be provided with administrative and logistical support.

## Section II. FUNCTIONS, CAPABILITIES, LIMITATIONS

### 71. Functions

a. The headquarters and headquarters company exercises control over operations of the battalion by—

- (1) Receiving preplanned and immediate air reconnaissance requests and special instructions relative to the requests and other information from the G2 Air duty team at field army. These requests have been approved by the ASOC and forwarded through Air Force channels to the tactical air force elements that will fly the mission. The battalion extracts pertinent information from these requests and instructions and disseminates this to the air reconnaissance liaison officer (ARLO) at the tactical air force base, by means of ARLO radio-teletype net (par. 66). These instructions provide the basis for that portion of the general and preflight briefings and postflight debriefings conducted by the ARLO for the tactical reconnaissance air crews.
- (2) Scheduling and supervising the aerial delivery of aerial imagery and reports obtained from imagery produced by the tactical air force for the field army.
- (3) Providing operational instructions to the reproduction and image interpretation elements of the battalion.
- (4) Insuring the prompt dissemination of information obtained from reconnaissance missions of the tactical air force flown in the area of interest of the field army.

b. The image interpretation and reproduction element of the MI battalion (ARS) at the tactical air force base is provided with the negative and two prints of all imagery flown by the tactical air force for the field army. Upon receipt of the prints the interpretation element plots and performs immediate interpretation on the imagery and forwards spot report (hot report, NATO) and immediate re-

ports over ARLO net to the MI battalion headquarters for dissemination over the information net. Based upon instructions received from the MI battalion headquarters, the reproduction element reproduces the images obtained in the required amounts, using annotated negatives when required, and packages and addresses the finished product for pick-up by the aerial delivery element of the headquarters company.

### 72. Capabilities

a. Four of the interpretation and reproduction detachments operate from dispersed tactical air force bases; the remainder of the battalion conducts operations from the vicinity of the battalion headquarters.

b. The aerial delivery section of the headquarters company is normally capable of performing three round trips daily between the tactical reconnaissance airfields, the field army headquarters, corps, and divisions.

c. Each of the reproduction elements can reproduce up to 400 9 by 18 inches contact prints from aerial roll film in a 24-hour period.

d. Each of the interpretation elements can accomplish immediate interpretation of up to 1,000 9 by 18 inch prints or negatives in a 24-hour period; however, this figure is subject to extreme variations because it is dependent upon the nature of the terrain covered by the photography, the skill and ability of the interpreter, the detail required in the interpretation, workload, and the familiarity of the interpreter with the terrain. Immediate interpretation is normally accomplished by the interpretation elements at the tactical air reconnaissance bases. The interpreter elements of the battalion headquarters are used to perform mission review, detailed and special interpretation. For a discussion and examples of the types of reports, see chapter 8.

e. The headquarters maintains negative and print files of all the imagery produced by tactical air for the field army over a 90-day period,

as well as negatives of the current initial record imagery of the army's area of interest. Original negatives produced by the Air Force revert to air force control. Print disposition is subject to field army SOP.

### 73. Limitations

The MI Battalion (ARS) operates within the following limitations:

a. A supply of fresh water must be readily

available to the reproduction elements regardless of location.

b. Because the battalion is not completely mobile, it must be augmented with transport if it is desired to displace the battalion as one echelon.

c. The reproduction elements can reproduce prints from 9 inches aerial roll film only. They do not have the capability to develop negatives from exposed film. No capability exists for production and reproduction of positive transparencies.

## CHAPTER 8

### IMAGERY INTERPRETATION

---

#### Section I. GENERAL

##### 74. Image Interpreters

Image interpreters are intelligence specialists trained in the techniques of extracting information from imagery produced by sensors. The image interpreter must know the intelligence requirements in order to quickly identify, locate and report information obtained from the imagery. Interpreters are generally employed as a group. They are normally located so as to have immediate access to the imagery processing facilities serving the various units engaged in employing airborne sensors. This assures the availability of adequate interpretation effort at all times, the elimination of administrative dead time in transmitting imagery, and the economical use of processing and interpretation equipment.

##### 75. Duties

a. The specific duties of image interpreters include the following:

- (1) Assist in the planning for aerial surveillance.

- (2) Interpret imagery and report on enemy offensive and defensive installations and civilian concentrations and movements.
- (3) Assist in the preparation of target folders and related material.
- (4) Prepare mosaics and panoramas.
- (5) Make map corrections from imagery.
- (6) Prepare terrain models.
- (7) Analyze terrain.

b. The effectiveness of the image interpreter is increased through experience and his knowledge of the following:

- (1) Capabilities and limitations of sensors, resultant imagery, and available interpretation equipment.
- (2) Purpose for which the imagery was obtained.
- (3) Comparative analysis.
- (4) Enemy tactics, equipment, and order of battle.

#### Section II. IMAGERY INTERPRETER SUPPORT

##### 76. Field Army

a. A military intelligence battalion (TOE 30-25E) is organic to each field army. It provides specialized intelligence and counter intelligence support. An imagery interpretation team is provided in the army headquarters support section of the headquarters and headquarters company (TOE 30-26E).

b. The field army is also supported by the military intelligence battalion (aerial reconnaissance support) which is discussed in chapter 7.

##### 77. Corps

Each corps is supported by the imagery

interpretation section of an attached military intelligence detachment (TOE 30-18E). The imagery interpretation section is usually located at corps headquarters or as determined by the corps G2 Air.

##### 78. Division

Each division is supported by the imagery interpretation section of an attached military intelligence detachment (TOE 30-17E) from the field army military intelligence battalion. For maximum efficiency image interpreters will be employed on a group basis at whatever site(s) imagery processing is accomplished.

## 79. Other Units

Other units having an aerial surveillance or target acquisition capability require and are provided imagery interpretation support.

a. Armored cavalry regiments and separate combat commands are provided imagery in-

terpretation support from attached MI detachments (TOE 30-14E).

b. Missile commands contain organic image interpreters.

c. The Field Artillery Target Acquisition Battalion is provided imagery interpretation support.

## Section III. TACTICAL USES OF IMAGERY

### 80. General

The tactical uses of imagery are similar at all echelons of the field army; however, emphasis on the use will vary according to the tactical situation and the echelon at which the imagery is used.

### 81. Specific Tactical Uses of Imagery

a. Imagery is used for the following purposes:

- (1) Operational planning.
- (2) Designation of objectives, lines of departure, axes of advance, boundaries between units, locations for units, drop zones for airborne units, and countermortar or counterbattery targets.
- (3) Firing charts for artillery units.
- (4) Patrol briefings.

b. Image interpreters exploit imagery for the following purposes:

- (1) Location and reporting of enemy offensive and defensive installations. These include such installations as missile, artillery, mortar, and automatic weapons emplacements; minefields, barbed wire, obstacles, strong points, and engineer equipment.
- (2) Location and reporting of enemy supply installations and lines of communication. These include forward area supply dumps, rear area supply depots, railheads, transshipment points, main supply routes, and avenues of approach.
- (3) Location and reporting of enemy armored, motorized and personnel concentrations.
- (4) Analysis of terrain. Image interpreters prepare trafficability analysis of

terrain for all types of military units and operations to include road and bridge studies. This use of imagery should not be confused with the detailed terrain studies prepared by the Corps of Engineers.

- (5) Confirm or deny intelligence information obtained from other sources or agencies. These include order of battle personnel, interrogation of prisoner of war personnel, technical intelligence teams, and covert sources.
- (6) Preparation of target folders. Image interpreters assist in the preparation of target folders and target information sheets on selected permanent targets. Target folders may be supplemented by detailed and special imagery intelligence reports or by selected imagery.
- (7) Damage assessment. Image interpreters determine the type and extent of damage and its impact upon the tactical situation.
- (8) Mosaics and panoramas. Mosaics and panoramas may be used for planning, briefing, locating, and designating targets. Preparation of mosaics and panoramas is time consuming and should only be used when imagery report will not suffice.
- (9) Map correction and supplement. Discrepancies occur between what is shown on maps and what actually exists as shown by aerial imagery. These discrepancies are noted and reported.

c. New uses for imagery are continually being developed which enhance the value of imagery for tactical purposes.



d. Except where a particular purpose is served, imagery will not normally be transmitted to the requesting agency. Intelligence

information obtained by the interpreter is furnished the requester by the most expeditious means.

#### Section IV. IMAGERY INTERPRETATION REPORTS

##### 82. General

Imagery interpretation reports serve two parallel objectives: Maximum exploitation of the information they contain and timely dissemination of intelligence to the user. The basic types of imagery interpretation reports are—spot reports (hot reports, NATO), immediate reports, mission review reports, summary reports, detailed reports, and special re-

ports. The requirements, preparation, and presentation for imagery interpretation reports are shown in appendix VI. TM 30-245 provides supplementary information on these reports.

##### 83. Report Types

The spot report (hot report, NATO) and the immediate report communicate to opera-

|                                                                                  |                  |
|----------------------------------------------------------------------------------|------------------|
| HEADQUARTERS<br>250th MILITARY INTELLIGENCE BATTALION (ARS)<br>APO 757 U.S. ARMY |                  |
| SPOT(HOT Report, NATO)                                                           | 092000 July 1960 |
| MISSION NR: 8TRS 397                                                             |                  |
| DATE FLOWN: 9 July 1960                                                          |                  |
| TIME FLOWN: 1700 hours                                                           |                  |
| 34 Med tonks porked in woods at DT 109413.                                       |                  |
| SENT TO: 12th Corps                                                              |                  |
| HOW SENT: Info Net                                                               |                  |
| REPORT NR. 128                                                                   |                  |
| SENT BY: Lt John L. Jones                                                        |                  |

Figure 27. Spot report (hot report, NATO).

tional units tactical information of immediate value and application. The mission review report is an index of the intelligence potential of an entire imagery mission; however, it does not develop the potential, but assists intelligence units at all levels in planning the efficient and economical utilization of imagery. The summary, detailed and special reports exploit fully the imagery. Thoroughness is the key to preparation of these reports. They are prepared for use in strategic and tactical planning.

*a. General Requirements.* The many uses for each report type and the diversity of conditions under which they are prepared require considerable latitude in the selection of the format. Certain information is included in the heading or in a legend according to the format of the report. This information includes—

- (1) Identification of reporting organization.
- (2) Number and date of report.
- (3) Name, location, and coordinates of the area, activity, installation, or item being reported upon.
- (4) Identification of the organization accomplishing the imagery, mission or sortie number(s); print number(s); and the date, scale, and quality of the imagery.
- (5) Appropriate map reference.

*b. Spot Report (Hot Report, NATO).* A spot report (hot report, NATO) (fig. 27) is rendered at the earliest possible time after the imagery is interpreted. It provides information in response to the specific purpose for which the mission was flown, or reports any new developments vital to current operations. The report is disseminated to the operational units concerned by the most rapid means of communication available. Speed of transmission is the essence of the spot report (hot report, NATO). The report has no required format nor is it subject to any standard distribution. In short, it is the simplest and fastest method of transmitting intelligence information directly to the user.

*c. Immediate Report.*

- (1) An immediate report is a short written report produced in addition to, or in lieu of, a spot report (hot report, NATO) when—

- (a) A wide distribution is required, or
  - (b) The exact operational activity concerned was unknown at the time of the spot report (hot report, NATO), or
  - (c) A permanent record of the report is desirable, or
  - (d) Additional data on information transmitted in a spot report (hot report, NATO) are requested.
- (2) An immediate report (fig. 28) may contain one or more subjects, depending upon the content of the imagery mission. With the exception of data which must be included in the heading or in a legend, no form is prescribed for the preparation of an immediate report. The report may be textual only; may be presented entirely on an annotated print, or may be a textual report with inclosed imagery or plots.

*d. Mission Review Report.* The mission review report provides intelligence agencies with a resume of the intelligence items covered on an imagery mission or sortie. It enables the using agencies to select only that coverage needed to fulfill their specific requirements, and is prepared only as required or requested.

*e. Summary Report.* A summary report records coverage of installations or activities within any one particular subject category, falling within a given area during a specified time. These reports have a three-fold purpose:

- (1) Listing imagery coverage of the particular subject category for specified areas and times (fig. 29).
- (2) Showing developments and trends of the targets during the period.
- (3) Describing the current status of the targets.

*f. Detailed Report.* The characteristic feature of a detailed report is that it deals with one particular subject. Detailed reports consist of two classes, descriptive and analytical.

- (1) The descriptive report describes the essential elements of a particular subject in textual and graphic form. It is normally confined to descriptions and measurements of installations and their more important components.

**HEADQUARTERS**  
**250th Military Intelligence Battalion (ARS)**  
**APO 757, USA**

101800 July 60

**IMMEDIATE IMAGERY INTERPRETATION REPORT--MILITARY DEFENSES (J)**

**MISSION DATA:**

| <u>MISSION NR:</u> | <u>DATE</u> | <u>PRINT NR.</u> | <u>F/L</u> | <u>ALTITUDE</u> | <u>APRX SCALE</u> | <u>TYPE COVER</u> |
|--------------------|-------------|------------------|------------|-----------------|-------------------|-------------------|
| 8 TRS 397          | 9 July 60   | 1-46             | 12"        | 5000            | 1:50000           | Recon             |

**LOCALITY:** North of YANGGU, Korea

**AREAS COVERED:** Prints: 1-19: DT1436 to DT1541  
 20-35: DT1436 to DT1739  
 36-46: DT0936 to DT1136

**MAP REFERENCE:** Korea 1:50000, Sheets 6829-IV and 6728-I

**LAST COVERAGE:** 6 TRS 381, 1 July 60

**SUMMARY:**

This sortie was of good quality, but shadow detail was poor due to the heavy overcast at the time of photography.

The coverage consisted of selected areas requested by G2, 30th and 37th Divisions. Many items of immediate value were found. SPOT(Hot Report, NATO) identifying target was reported by radio to 12th Corps.

**1. The following items were extracted from sortie 8 TRS 397:**

| <u>ITEM NR.</u> | <u>PHOTO NR.</u> | <u>COORDINATE</u> | <u>DESCRIPTION</u>                                    |
|-----------------|------------------|-------------------|-------------------------------------------------------|
| 1               | 34-35            | DT079411          | 2 open emplacements, camouflaged AA or Mortar.        |
| *2              | 30-31            | DT109413          | 34 med tanks in woods.                                |
| 3               | 31-32            | DT103409          | 2 probable camouflaged arty pieces in ruins of house. |
| 4               | 5-6              | DT107404          | AA/MG (occupied)                                      |

\*SPOT Report to 12th Corps, 092000 July.  
 (Hot Report,  
 NATO)

**JOHN L. JONES**  
 Lt Arty  
 Adjutant

*Figure 28. Immediate imagery intelligence report.*

|                                                               |                  |                 |                |                          |                      |                   |
|---------------------------------------------------------------|------------------|-----------------|----------------|--------------------------|----------------------|-------------------|
| <b>SUMMARY IMAGERY INTERPRETATION REPORT</b>                  |                  |                 |                |                          | <b>NUMBER</b>        | <b>DATE</b>       |
| Airfield Activity (A)                                         |                  |                 |                |                          | 34                   | 271300 Jan 60     |
| <b>ORGANIZATION AND STATION</b>                               |                  |                 |                |                          |                      |                   |
| 250th M.I. Bn (ARS), APO 757                                  |                  |                 |                |                          |                      |                   |
| <b>MISSION DATA:</b>                                          |                  |                 |                |                          |                      |                   |
| <u>MISSION NR</u>                                             | <u>DATE</u>      | <u>PRINT NR</u> | <u>F/L</u>     | <u>ALTITUDE</u>          | <u>APPROX. SCALE</u> | <u>TYPE COVER</u> |
| 45B                                                           | 23 Jan 60        | 1-56            | 36"            | 25/26000                 | 1:8500               | Recon             |
| <b>REFERENCES:</b>                                            |                  |                 |                |                          |                      |                   |
| WAC AREA: 231                                                 |                  |                 |                |                          |                      |                   |
| MAP REFERENCES: GERMANY 1:100000, Sheet S7 AMS M641           |                  |                 |                |                          |                      |                   |
| OTHER REFERENCES: None                                        |                  |                 |                |                          |                      |                   |
| INCLOSURES: (1) Overlay Nr. 5 (2) Annotated Photos 1-56       |                  |                 |                |                          |                      |                   |
| <b>SUMMARY OF ACTIVITY:</b>                                   |                  |                 |                |                          |                      |                   |
| New construction on hangars, plane revetments and facilities. |                  |                 |                |                          |                      |                   |
| <b>DETAIL INSTALLATIONS:</b>                                  |                  |                 |                |                          |                      |                   |
| <u>NR.</u>                                                    | <u>TYPE</u>      | <u>SIZE</u>     | <u>OVERLAY</u> | <u>REMARKS</u>           |                      |                   |
| 2                                                             | Steel Hongors    | 75' x 100'      | Nr. 5          | Recently Completed       |                      |                   |
| 5                                                             | Earth Revetments | 75' x 100'      | Nr. 5          | Recently Completed       |                      |                   |
| <b>INTERPRETED BY:</b>                                        |                  |                 |                | <b>APPROVED BY:</b>      |                      |                   |
| Sgt Jones                                                     |                  |                 |                | R. L. Smith<br>Capt, Inf |                      |                   |

Figure 29. Summary imagery interpretation report.

- (2) The analytical report is a more intensive analysis of installations or activities than the descriptive report. It is the most exhaustive study of the subject possible under the operational conditions. Its preparation requires use of intelligence information from

all available sources and of comparative imagery.

*g. Special Report.* The special report is used to meet requirements for a special presentation of subject matter that cannot be adequately met by other type reports.

## FORT BRAGG, NORTH CAROLINA

## DETAILED IMAGERY INTELLIGENCE REPORT - BASIC INDUSTRY (QQ)

## REYNOLDS ALUMINUM PLANT

## SHEFFIELD, ALABAMA

32°45'45"N/87°35'00"W

- I. **SUMMARY:** This report deals with the Sheffield Aluminum Plant, Sheffield, Ala. This plant has three (3) processes.....
- II. **LOCATION:** The plant is located in the northwest section of Alabama on the south side of the Tennessee River.....
- III. **TERRAIN:** The terrain around the plant area rises from 500' above sea level at Sheffield to 1148' approximately twenty.....
- IV. **OBSTRUCTIONS TO FLIGHT :** Following are the known obstructions to flight as learned from a study of maps, photography and.....
- V. **ELECTRICAL POWER SOURCE:** The power that the plant uses is furnished by the hydro-electric power plant at Wilson Dam.....
- VI. **ALUMINA PRODUCTION:** The bauxite ore is brought into the plant area by rail lines and is stored in the bauxite storage.....
- VII. **TRANSPORTATION:** Plant is serviced by four-lane highway that parallels the plant on the south side. There is a .....

## INCLOSURES:

1. Photo Mosaic
- 2A Rail Overlay
- 2B Functional Units Overlay
- 2C Functional Areas Overlay
3. Enlargement, Alumina Production & Aluminum Reduction Areas
4. Enlargement, Rolling Mills Area
5. Plot Map
6. Small Scale Pinpoint Photo
7. Target Area Map, 50 n.m. Radius

## INTERPRETED BY:

M/SP Jae D. Land  
M/SP David L. Gray  
Sgt Charles A. Lagg

## APPROVED BY:

DAVID B. WILSON  
Capt Arty  
Adjutant

*Figure 30. Detailed imagery interpretation report.*

## CHAPTER 9

### BRIEFING AND DEBRIEFING

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#### Section I. BRIEFING

##### 84. Purpose

Briefings are presented to orient flying personnel on their mission. General and preflight briefings are conducted using the outline of the operations order (app. VII.)

##### 85. General Briefing

a. The general briefing is normally given daily or when designated by the air reconnaissance squadron or aviation company operations officer. It is controlled by the operations officer of the unit, and is normally given to all flying personnel at one time. Information may be presented by the ARLO/G2 Air representative, and the commanding officer, operations officer, intelligence officer, supply or technical officer and weather officer of the unit. The objective is to acquaint flying personnel with the current enemy and friendly situation, the terrain and the weather, and administrative instructions.

b. The information presented by the ARLO/G2 Air representative includes the following items:

- (1) Enemy ground situation to include—
  - (a) Activity across the front to the depth of the area of interest; pertinent items of order of battle; and an estimate of the enemy situation.
  - (b) Location of critical terrain features; possible assembly areas; major supply routes and possible choke points.
- (2) The friendly ground situation including the mission and planned activity along the front.
- (3) A discussion of the aerial surveillance or air reconnaissance plan of the command and the announcement of the commander's EEI.

##### 86. Preflight Briefing

The preflight briefing is used to orient the flying personnel with the requirements of the mission to be flown. The success or failure of the air effort expended is dependent upon the understanding of the mission by the flying personnel. The briefing may be given by the ARLO/G2 Air representative alone or in coordination with the operations officer of the unit. Briefings are presented in the time available and may vary from thirty minutes for a preplanned mission to a few minutes for an immediate mission. The briefing includes the following information:

- a. Changes in the enemy or friendly situation.
- b. Mission requirements to include the requesting unit, priority, type mission, location and description of target, information desired, type and scale of imagery (if required).
- c. Coordinating instructions such as call signs, frequencies, and reporting instructions.

##### 87. Briefing Material

a. The G2 Air provides briefing materials to the ARLO/G2 Air representatives through established channels.

b. The G2 Air briefer keeps himself informed and has adequate briefing aids available. He maintains a situation map to include the next higher echelon, covering in detail the area of interest of the command. Additional material used includes: Aerial photographs of the area of operations should be available as well as pertinent portions of operations orders, aerial surveillance or reconnaissance plans, order of battle books and reports, target lists, terrain studies, air defense charts, periodic intelli-

gence reports and summaries, and intelligence estimates. Additional aids may include miniature models of enemy equipment, identification

handbooks, imagery interpretation keys, terrain models, and sketches of enemy equipment or positions.

## Section II. DEBRIEFING

### 88. Purpose

The purpose of the debriefing is to obtain from flying personnel the maximum amount of usable information. The debriefing must be well planned, so that the available information is obtained and disseminated in a minimum amount of time.

### 89. Planning

It is desirable that the same individual brief and debrief a crew. A debriefing checklist is used for each mission (app. VIII) and applicable portions are filled in as information becomes available. Maps and photographs should be readily available to assist the pilot or observer in locating positions on the ground.

### 90. Conduct of Debriefing

a. The debriefing is held as soon as practicable after the aircraft has returned, and is conducted in an informal atmosphere, in coordination with the unit intelligence officer. Each crew member is questioned separately.

b. The normal sequence of a debriefing is—

- (1) Preparation of the pilot's trace indicating areas covered by imagery (where applicable).
- (2) General discussion of the mission.
- (3) Amplification of in-flight spot reports.
- (4) Consideration of the mission requirements and a discussion of information by the sequence of events during the mission.
- (5) Development of special information where desired.

c. The debriefing should be conducted without interruption. However, the debriefer may develop information of such a nature that it should be disseminated immediately by a spot report.

d. Preparation of mission reports is facilitated by tape recording the debriefing session. When a tape is played back to the flying personnel, it refreshes their memories and assures that all observations have been reported. It also allows close study of the crew's statements and is of material assistance in preparing mission reports.

### 91. Questioning Techniques

a. The function of the ARLO/G2 Air representative is to obtain all the usable information available. In order to be effective, he must establish rapport with the flying personnel. The ability to develop the required information is a combination of personality, personal leadership, professional competence, and an inquiring mind. It is desirable that the debriefer perform occasional surveillance missions so that he can understand the problems, capabilities, and limitations of observers.

b. The ARLO/G2 Air representative should not—

- (1) Ask leading questions.
- (2) Show disbelief during debriefing.
- (3) Be too insistent in questioning.
- (4) Detain flying personnel at debriefing longer than is necessary.
- (5) Argue or conduct needless discussion.

## Section III. RECORDS AND REPORTS

### 92. Records

The ARLO/G2 Air representative maintains the following records: a permanent daily journal; a status record of aircraft available; flights planned, completed, and in flight; debriefing notes; and reports.

### 93. Reports

a. Three types of reports are submitted by ARLO/G2 Air representatives: (1) Spot Report; (2) Mission Report; (3) Summary Report. They may or may not be submitted in

conjunction with the reports prepared by imagery interpreters.

*b.* A spot report is submitted by the debriefer, and contains information that must be acted upon immediately.

*c.* A mission report is a detailed written report submitted at the conclusion of each mission, and is based on the notes recorded on

the debriefing checklist (app. VIII). Spot reports made during the mission are referenced in the mission report.

*d.* A summary report consolidates information of selected enemy activity and is submitted as required by the G2 Air. These reports are used for analyzing the enemy situation and for planning purposes.



## APPENDIX I

### REFERENCES

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|                   |                                                                          |
|-------------------|--------------------------------------------------------------------------|
| AR 10-122         | United States Army Security Agency (U)                                   |
| AR 320-5          | Dictionary of United States Army Terms                                   |
| AR 320-50         | Authorized Abbreviations and Brevity Codes                               |
| DA Pam 310-series | Military Publications Indexes (as applicable)                            |
| DATC 101-1        | Prediction of Fallout and Radiological Monitoring and Survey             |
| DATC 101-2        | Tactical Operations Centers                                              |
| FM 1-5            | Army Aviation Organization and Employment                                |
| FM 1-100          | Army Aviation                                                            |
| FM 5-30           | Engineer Intelligence                                                    |
| FM 6-40           | Field Artillery Cannon Gunnery                                           |
| FM 7-100          | Infantry Division                                                        |
| FM 11-40          | Signal Corps Pictorial Operations                                        |
| FM 17-100         | Armored Division and Combat Command                                      |
| FM 21-30          | Military Symbols                                                         |
| FM 30-5           | Combat Intelligence                                                      |
| FM 30-7           | Combat Intelligence, Battle Group, Combat Command and Smaller Units      |
| FM 30-9           | Military Intelligence Battalion, Field Army                              |
| FM 30-9A          | Military Intelligence Battalion, Field Army (U)                          |
| FM 30-10          | Terrain Intelligence                                                     |
| FM 30-15          | Intelligence Interrogation (U)                                           |
| FM 30-16          | Technical Intelligence (U)                                               |
| FM 30-19          | Order of Battle Intelligence                                             |
| FM 31-30          | Jungle Operations                                                        |
| FM 31-40          | Tactical Cover and Deception (U)                                         |
| FM 31-71          | Northern Operations                                                      |
| FM 31-72          | Mountain Operations                                                      |
| FM 41-10          | Civil Affairs Military Government Operations                             |
| FM 100-5          | FSR Operations                                                           |
| FM 101-5          | Staff Officers Field Manual; Staff Organization and Procedure            |
| FM 101-10         | Staff Officers Field Manual; Organization, Technical and Logistical Data |
| JCS Pub 1         | Dictionary of United States Army Military Terms for Joint Usage          |
| JCS Pub 2         | Unified Action, Armed Forces                                             |
| SR 380-305-10     | Standardization of Photo Intelligence Reports, Designation, and Content  |
| TM 5-545          | Geology and Its Military Applications                                    |
| TM 30-245         | Photographic Interpretation Handbook                                     |
| TM 30-246         | Tactical Interpretation of Air Photos                                    |

## APPENDIX II

### SEQUENCE OF G2 AIR PLANNING

---

#### 1. General

##### *a.* Unit Mission:

- (1) The commander's concept.
- (2) Operations plans.
- (3) EEI.
- (4) Intelligence annexes.

##### *b.* Insure surveillance of the zone of responsibility by:

- (1) Preparation of surveillance plans.
- (2) Integration of aerial surveillance with ground reconnaissance and observation.

##### *c.* Coordination with subordinate, adjacent and higher units.

##### *d.* Emphasizing areas of priority.

##### *e.* Continuous planning.

#### 2. Specific

##### *a.* Study terrain to determine choke points, assembly areas, routes of approach, enemy positions, supply and communications routes.

##### *b.* Study areas rendered suspect by other intelligence sources.

##### *c.* Review latest weather forecasts.

##### *d.* Process and consolidate all requests.

##### *e.* Reserve a portion of the supporting air effort for immediate missions.

##### *f.* Maximum use of organic aviation.

##### *g.* Review available imagery before requesting new or additional imagery (master cover trace).

##### *h.* Coordinate ground and air intelligence efforts to obtain mutual support, where possible.

##### *i.* Eliminate duplication of effort.

##### *j.* Review air request forms before transmitting to supporting air elements for accuracy and completeness.

##### *k.* Insure that plans are commensurate with the capabilities of available aircraft, reproduction facilities, image interpreters, observers, and sensory equipment.

##### *l.* Insure that all requests levied on the G2 Air are included in planning.

##### *m.* Prepare final aerial surveillance plans including assignment of tasks to subordinate units.

##### *n.* Continue planning and daily operations.

**APPENDIX III**  
**EXAMPLE OF A G2 AIR COLLECTION WORKSHEET**  
*(Located in back of manual)*

## APPENDIX IV

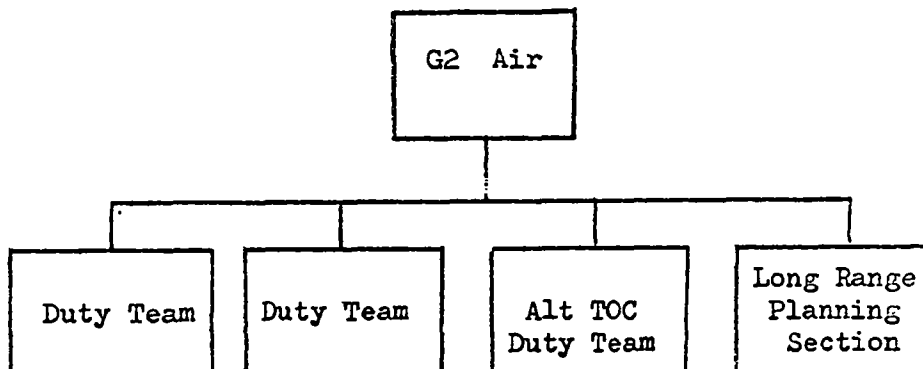
### EXAMPLE OF G2 AIR BRANCH SOP

G2 Air Branch  
G2 Section  
13th Field Army  
APO 217  
12 October 1960

#### STANDING OPERATING PROCEDURES: G2 AIR BRANCH

##### 1. Organization

The G2 Air Branch consists of personnel organic to the 13th Field Army and is organized as shown below:



##### 2. Duties

###### a. G2 Air, Chief G2 Air Branch.

- (1) Is Chief G2 Air Branch.
- (2) Recommends policies and procedures for conduct of aerial surveillance.
- (3) Prepares the aerial surveillance plan.
- (4) Prepares the aerial surveillance SOPs.
- (5) Assists other staff sections in establishing requirements, to include special studies.
- (6) Processes aerial surveillance requests.
- (7) Establishes priorities for aerial surveillance requests within the command.
- (8) Maintains and disseminates information of the capabilities and allocations of the aerial surveillance support.
- (9) Coordinates the scheduling of avail-

able tactical air reconnaissance effort with the ASOC senior reconnaissance duty officer.

- (10) Implements cover and deception measures.
- (11) Participates with G3 Air in planning close air support and interdiction.
- (12) Provides for briefing and debriefing of flying personnel in support of the aerial surveillance effort.
- (13) Conducts appropriate portions of the daily planning conference with the ASOC.
- (14) Supervises the employment of the MI Battalion (ARS) and image interpreters with the G2 section.
- (15) Disseminates intelligence of the enemy air capability to the TOC.

- (16) Disseminates intelligence resulting from the aerial surveillance effort.
  - (17) Administers the G2 Air Branch.
  - b. *G2 Air, Duty Team Chief.*
    - (1) Is an Assistant G2 Air (operations) and Assistant Chief, TASE.
    - (2) Supervises one duty team.
    - (3) Assists in the preparation of the aerial surveillance plan.
    - (4) Maintains liaison with the ASOC reconnaissance duty officer.
    - (5) Informs G2 Air of changes in capabilities and availability of the aerial surveillance effort.
    - (6) Processes and coordinates immediate and preplanned aerial surveillance and reconnaissance requests. This processing includes approval or disapproval of immediate requests and supervision of accomplishment of approved preplanned requests.
    - (7) Recommends approval or disapproval of incoming preplanned requests.
    - (8) Determines intelligence requirements to be met by aerial surveillance and initiates requests.
    - (9) Informs requester of the action taken on requests.
    - (10) Maintains liaison with the G3 Air duty team chief.
    - (11) Provides MI Battalion (ARS) with information of the current situation, EEI, and specific mission requirements.
    - (12) Supervises maintenance of the G2 Air situation map, aerial surveillance log, mission status board, and mission folders.
    - (13) Initiates and coordinates tactical aircraft for artillery adjustment with G3 Air and fire support personnel.
    - (15) Coordinates approved tactical air reconnaissance requests with the air defense element, TASE.
  - c. *G2 Air Operations Assistant.*
    - (1) Maintains the G2 Air situation map and mission status board.
    - (2) Supervises the maintenance of the aerial surveillance log.
    - (3) Maintains the operating level of supplies and equipment.
  - d. *Clerk-Typist.*
    - (1) Maintains the aerial surveillance log.
    - (2) Maintains mission folders.
    - (3) Types requests, reports, and routine correspondence.
    - (4) Posts the G2 Air situation map as directed.
    - (5) Maintains administrative circulation of reconnaissance requests and resulting information within the G2 Air branch.
  - e. *G2 Air Alternate TOC Duty Team Chief.*
    - (1) Supervises the TOC duty team.
    - (2) Supervises maintenance of alternate records.
    - (3) Coordinates aerial surveillance requirements with the G2 staff outside the FATOC.
    - (4) Performs other tasks as directed.
  - f. *Long Range Planning Section Chief.*
    - (1) Supervises the long range planning section.
    - (2) Develops long range plans for aerial surveillance for the 13th Field Army.
    - (3) Performs other tasks as directed.
- ### 3. Shifts
- a. Personnel are organized into two shifts: day shift, 0800–2000; night shift, 2000–0800; 30 minute overlap each shift.
  - b. G2 Air maintains roster and rotates shifts each two weeks.
- ### 4. Determination of EEI and Other Intelligence Requirements
- (Based on appropriate portion of G2 Section SOP.)
- ### 5. Preparation of Plans and Orders
- (Based on appropriate portion of G2 Section SOP.)
- ### 6. Tasks for Supporting Unit Commanding Officer, MI Battalion (ARS)
- a. Commands and supervises all elements of the battalion regardless of location.

b. Supervises functioning of the ARLO net and the army information net from MI Battalion (ARS) to FATOC.

c. Attaches one ARS detachment to each supporting tactical reconnaissance squadron.

d. Provides aerial delivery of imagery to requesting units.

e. Provides operational instructions to the reproduction and imagery interpretation platoons.

f. Disseminates promptly all information obtained from tactical air reconnaissance missions.

g. Maintains library of all imagery reproduced for the field army over a 90-day period. After 90 days, return to reconnaissance technical squadron.

h. Provides the ARLO material for briefings.

i. Conducts intelligence studies as directed.

## 7. Requests to Higher and Adjacent Headquarters

(Based on appropriate portion of the G2 Section SOP.)

## 8. Records and Files

a. *Maps.* G2 Air situation map will include the field army area of interest and the field army rear area to show supporting TAF installations. Map scale 1:500000 and 1:250000. (Scale 1:250000—separate sheets.)

b. *Overlays.* Area, route and point overlays.

(1) Develop in coordination with TAF (ASOC).

(2) Distribution—1 cy G3 Air

1 cy division and corps  
and higher headquarters

8 cys MI Battalion  
(ARS)

1 cy ASOC

1 cy TAF squadron

1 cy TAF wing

(3) Prepare associated change table. Distribution as above.

c. *Aerial Surveillance Mission Status Board.*

d. *Journals and Logs.*

(1) Aerial surveillance log. Maintain for 24-hour period effective 0001 hours daily. Retain on file.

(2) Maintain G2 Air Branch journal for 24-hour period. Prepare in duplicate (1 copy—G2 Air, and 1 cy—G2 Section). Maintained by the duty action team.

e. *Files and Folders.*

(1) Aerial surveillance requests are filed in mission folders:

(a) Disapproved.

(b) Approved.

(c) Completed.

(d) Aborted.

(2) Target Folders.

(3) ARLO Report Files.

(a) Spot.

(b) Mission.

(4) Imagery Interpretation Report Files.

(a) Spot (Hot, NATO).

(b) Immediate.

(c) Mission Review.

(d) Summary Reports.

(e) Detailed Reports.

(f) Special Reports.

(5) Administrative files are screened each quarter. Eliminate material not pertinent or no longer of value. Retain office of record material.

## 9. Maintain a Duplicate Set of Maps, Overlays, and Status Boards at Alternate CP

## 10. Production

(Based on appropriate section of G2 SOP.)

## 11. Dissemination

a. *Tactical Air Reconnaissance Information.* Disseminated via Army Information Net from MI Battalion (ARS).

b. *Other Information.* May be disseminated by G2 via Army Information Net.

c. *Information for Restricted Distribution.* May be distributed over point-to-point or common user telephone.

d. *Approvals or Disapprovals.* G2 Air Duty Team Chief notifies requester by fastest means available.

e. *Overlays.*

(1) Area, route, and point overlays with change tables are distributed 24 hours prior to effective date. Distributed to

G3 Air, ASOC, MI Battalion (ARS) and subordinate corps via courier.

- (2) Special Studies. Distribute as directed by the G2 Air within time required and security factors.

## 12. Liaison and Staff Visits

a. G2 Air effects personal liaison with MI Battalion (ARS).

b. MI Battalion (ARS) arranges G2 Air visits to TAF Reconnaissance Wing as directed.

c. Duty team chief coordinates with G2 administration daily to insure representation and personal liaison with subordinate echelons through members of army G2 Section.

d. Liaison.

- (1) *MI Battalion (ARS).*

(a) Maintain liaison with supporting TAF Reconnaissance Wing to include squadrons.

(b) Maintain liaison with G2 Air Branch.

(c) Maintain liaison with army aviation operations officer regarding delivery platoon operations.

- (2) *G2 Air.* Maintains liaison with army G2 section, ASOC, G3 Air, other staff officers, and higher and next lower echelons.

- (3) *Duty Team Chief.* Maintains liaison with other sections of FATOC and ASOC, as required.

## 13. Plans

a. Branch planning program is organized, supervised and coordinated by G2 Air. It reflects current and future operational plans.

b. G2 Air participates in G2-G3 planning conferences.

c. G2 Air presents the G2 Air surveillance briefing at the evening planning conference held at ASOC at 2000 hours daily.

d. G2 Air or a designated representative conducts a preliminary planning conference with the ASOC Senior Reconnaissance Duty officer at 1800 hours daily.

e. MI Battalion (ARS) submits information copies of all plans to G2 Air.

## 14. Command Post Movement

a. During the CP movement, the on-duty shift continues operations until notified to close out.

b. Off-duty shift establishes the G2 Air branch at new command post location and continues operations until relieved.

c. If command post is destroyed, the alternate TASE will be opened.

d. MI Battalion (ARS) will organize to provide continuity in event of displacement or destruction. Alternate command lines will be designated.

## 15. G2 Air Branch Security

(Based upon appropriate portion of G2 Section SOP and existing army regulations.)

## 16. Aerial Imagery

- a. *Initial Record Imagery.* Distribution:
- MI Battalion (ARS)—2 sets army zone sector (500 km depth)
  - Corps—2 sets corps zone sector (160 km depth)
  - Division—3 sets division zone sector (80 km depth)

b. *Other Cover.*

- (1) Imagery interpreted as directed by G2 Air.
- (2) When operationally required, prints will be furnished upon request.
- (3) Mosaic and photomap requests will be routed through G2 Air for written approval. Minimum 10-day lead time will be required.
- (4) Permanent type imagery prints will be delivered up to 3 times daily to each corps and division. Special delivery under exceptional circumstances.

## 17. Communication Channel and Systems

a. *See Current Field Army SOI.*

b. *See ALO for TAF SOI.*

## 18. Requests and Reports

a. *General Instructions.*

- (1) Preplanned requests to field army by 1600 hours daily.

- (2) Immediate requests as required.
- (3) All mission requests use prescribed request.
- (4) Incomplete or erroneous requests will not be disapproved or returned to originator if clarification can be obtained.

*b. Sequence Administrative Processing of Requests and Reports.*

- (1) *Immediate surveillance requests.* G2 Air prepares in 3 copies.

*Action taken by—Clerk-Typist*

- (a) Request received; data entered on request.
- (b) Enters following information on aerial surveillance log: Log #, unit request type, request #, and army mission #.
- (c) Forwards copies to duty team chief.

*Duty Team Chief*

- (a) Evaluates request considering the following:
  - 1. Field army priority (target location, nature of target, importance to field army mission).
  - 2. Time required.
  - 3. Duplicate request or duplication of available information.
  - 4. Possible consolidation with existing preplanned missions.
  - 5. Sensor selection.
  - 6. If permanent imagery is requested, check MI Battalion (ARS) reproduction capabilities.
- (b) Enters information relative approval or disapproval in request. Files one copy in appropriate mission folder.
- (c) If approved, transmits requirements to ASOC reconnaissance duty officer. If disapproved, notifies unit giving reason.
- (d) Completes appropriate sections of request.
- (e) Forwards request to Operations Assistant.

*Operations Assistant*

- (a) Makes entry on mission status board.
- (b) Plots on surveillance overlays.
- (c) Forwards request to clerk-typist.

*Clerk-Typist*

- (a) Completes entry on surveillance log.
- (b) Completes information in appropriate sections of original copy of request.
- (c) Files original copy of request in appropriate mission folder.
- (d) Forwards request information to ASOC and MI Battalion (ARS).
- (2) *Preplanned Air Reconnaissance Requests.*

*Clerk-Typist*

- (a) Request received; records time received on request; makes entry in surveillance log.
- (b) Forwards 3 copies request to Operations Assistant.

*Operations Assistant*

- (a) Checks request for completeness and accuracy. If error exists, clarify.
- (b) Forwards 3 copies of request to duty team chief.

*Duty Team Chief*

- (a) *Immediately* determines if requested information is currently available. Also determines if request can be consolidated with missions scheduled for instant date.
- (b) By 1600 hours:
  - 1. Integrates subordinate unit requests with those originated by field army.
  - 2. Places requests in order of priority.
  - 3. Reviews sensor selection for each request.
  - 4. Combines requests into single missions, where feasible, to use the full capability of the sensors and aircraft. Annotates sequential priority on each copy of the request. Combined requests assume the position of the highest priority requested in the consolidation.
  - 5. Prepares draft of recommended aerial surveillance overlay.
- (c) By 1730 hours—Presents recommendations for aerial surveillance plan to G2 Air. G2 Air retains the draft copy of the overlay and two copies of the requests in consolidated form. Remaining copy of



each consolidated request given to Operations Assistant.

*Operations Assistant*

From information obtained from the copies of the requests, makes following entries on mission status board: mission #, type and target description. Files requests in appropriate mission folder.

*G2 Air*

- (a) By 1930 hours—Coordinates army requirements with ASOC senior reconnaissance duty officer, to result in scheduling of missions and completion of appropriate sections of each request. Presents tentatively approved army requirements at 2000 hours daily briefing at ASOC for formal approval.
- (b) Returns one copy of requests and overlay (with modifications noted) to Duty Team Chief.

*Duty Team Chief and Operations Assistant*

- (a) From information contained in mission data section of the requests, completes mission status board. Disseminates to all users via fastest electrical means.
- (b) Notifies units of any requests that were disapproved.

*Clerk-Typist*

- (a) Transfers information contained in mission data section of the completed requests to the corresponding copy of the request in appropriate mission folder.
  - (b) Files one copy of requests in mission folders as appropriate.
  - (c) Forwards other copy of each approved request to MI Battalion (ARS).
- (3) *Surveillance and Immediate II Reports.*
- Clerk-Typist*
- (a) Receives and prepares journal entries.
  - (b) Forwards to Operations Assistant.

*Operations Assistant*

- (a) Plots on situation map (appropriate portions only).
- (b) Makes entry on mission status board.
- (c) Forwards to Duty Team Chief.

*Duty Team Chief*

- (a) Checks location of sighting. Makes determination regarding further action, to include forwarding to G2 Air and/or further surveillance, if required.
- (b) Notifies interested agencies who would not be notified as result of dissemination over Army Information Net.

*Clerk-Typist*

Reflects action taken on journal and files reports.

- (4) *Spot Reports (Hot Reports, NATO).* Same action as in (3) above. They will be given immediately to the Duty Team Chief for action. Other processing will follow the Duty Team Chief's action.

**19. Auxiliary Agencies**

- a. MI Battalion (ARS).
- b. Signal operations battalion provides support as prescribed in current directives.

**20. Coordination with Other Agencies**

Coordination with other agencies is effected by officer responsible for specific function.

**21. Training**

a. *G2 Air Branch.* G2 Air trains officers and enlisted personnel in the operations of the Branch.

b. *MI Battalion (ARS).*

- (1) Conducts training of all assigned personnel.
- (2) ARLOs conduct classes for TAF Reconnaissance Wing personnel when required on:
  - (a) Artillery adjustment.
  - (b) Friendly and enemy order of battle.
  - (c) Friendly and enemy tactics.
  - (d) Army map reading.

c. G2 Air advises and assists subordinate echelons and auxiliary agencies.

**APPENDIX V**  
**EXAMPLE OF AERIAL SURVEILLANCE AND RECONNAISSANCE**  
**APPENDIX, FIELD ARMY**

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Copy No. 9  
Thirtieth Army  
HEIMERSHEIM, (595120) GERMANY  
100930 July 19 ----  
XR 273

Appendix II (Aerial Surveillance and Reconnaissance) to Annex A (Intelligence) to Operation Order 6.

Map: GERMANY, 1:250000, AMS Series 508, Sheets K51, K52, K53, L51, L52, L53, M51, M52, M53.

**1. Situation**

a. *Enemy.* Annex A (Intelligence) to OPORD 6.

b. *Friendly Forces.* 373 Tactical Reconnaissance Wing, Ninth Tactical Air Force supports Thirtieth Army.

**2. Mission**

Reconnaissance elements of Ninth Tactical Air Force supports Thirtieth Army with 60 day, 15 night, and 4 electronic sorties per day from 170600 to 231800 May.

**3. Execution**

a. *Concept.* Maximum use will be made of Army aircraft for visual, photo, and electronic missions. TAF reconnaissance will be used for photo and visual missions beyond organic capabilities. Target program to receive priority of support. Priority of Support: Army artillery, 3 Corps, 1 Corps, 2 Corps.

b. *Immediate Missions.* Request via air request net as required. Use TAB A (Routes), TAB B (Areas), and TAB C (Point) overlays for visual requests.

c. *Preplanned Missions.* TAB D.

d. *205th MI Bn (ARS).* Plot all TAF photography, furnish daily master cover traces to army, corps, division; perform immediate in-

terpretation of imagery flown in support of Army; conduct three flights daily between TAF recon bases, MI Bn (ARS), corps, divisions; other tasks as approved this Hq.

e. *Imagery Interpretation Responsibilities.*

(1) *Divisions.* All imagery produced organically; TAF imagery as requested.

(2) *Corps.* Same as divisions.

**4. Administration**

a. Distribution of imagery—Thirtieth Army SOP.

b. Procedures for submission of mission requests—SOP.

c. *Other Imagery.* Duplicate negatives of all SLAR and IR imagery produced at corps and division to be forwarded to this headquarters within 24 hours of TOT.

**5. Command and Signal**

a. Air Request Net to be used for submission of requests only.

b. Divisions monitor Army Information Net if feasible.

c. All units having capability monitor Tactical Air Observation Net (TAF).

d. Base plan index, frequencies, and call signs—current SOI. Acknowledge.

MANLEY  
LT GEN

Tabs: A (Routes)  
B (Areas)  
C (Points)  
D (Preplanned Missions)

DISTRIBUTION: C

OFFICIAL

/s/ Taylor  
TAYLOR  
G2

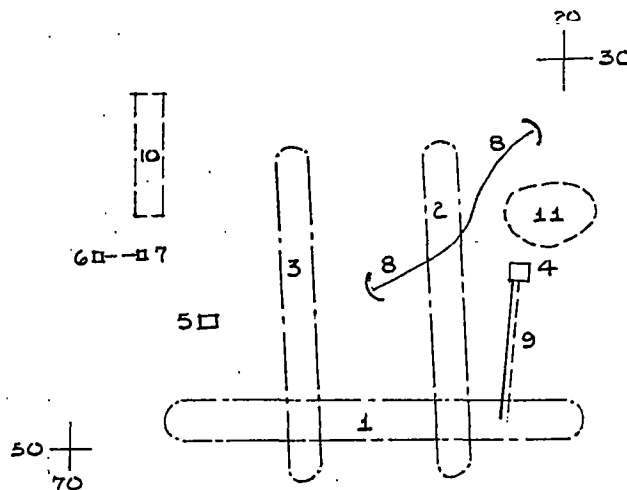
TAB. D. Appendix 1 to Annex A to OPORD 6.  
ORGANIC AREA COVERAGE FOR 5 July 60

Missions Assigned 24 Division Aerial Surveillance  
Platoon:

- 1 SLAR (1-5)
- 2 SLAR (2-5)
- 3 SLAR (3-5)
- 4 V-Photo (6-5)
- 5 V-Photo (7-5)
- 6 V Photo Strip (12-5)
- 7 HO-Photo Strip (12-5)
- 8 V-Photo Strip R-4 (21-5)
- 9 IR/V Photo Strip R-1 (24-5)
- 10 IR (25-5) (0900, 1100, 1330, 1800, 2200)

*Note.* Example of Tab D made to show area coverage. It does not indicate flight lines. A color scheme is normally used.

TAB D. Preplanned Mission



# APPENDIX VI

## IMAGERY INTERPRETATION REPORTS

CHART 1

| FACTORS TO BE CONSIDERED WHEN ESTABLISHING REQUIREMENTS<br>FOR THE VARIOUS IMAGERY INTERPRETATION REPORTS |                                                                                                                                               |                                                                                                                                                               |                                                                                                                                                       |                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| REPORTS                                                                                                   | FACTORS                                                                                                                                       |                                                                                                                                                               |                                                                                                                                                       |                                                                                                                                       |
|                                                                                                           | ORDER OF PRIORITY                                                                                                                             | PURPOSE                                                                                                                                                       | CONTENTS                                                                                                                                              | PERMANENCE<br>OF INFORMATION                                                                                                          |
| SPOT<br>(HOT Report,<br>NATO)                                                                             | 1st priority,<br>items are reported<br>as soon as they are<br>discovered by the<br>interpreter.                                               | To furnish in-<br>formation directly<br>to operational units<br>by the fastest<br>possible means.                                                             | Results of the<br>purpose of the sortie<br>or mission, and<br>findings of immediate<br>interest or great<br>significance.                             | The duration of the<br>operation. Most of its<br>value is lost as soon<br>as the information is<br>assessed for opera-<br>tional use. |
| IMMEDIATE<br>REPORT                                                                                       | Second only to the<br>SPOT(HOT Report,<br>NATO) report.                                                                                       | To furnish a<br>written report of<br>information to opera-<br>tional or intelligence<br>units without undue<br>lapse of time.                                 | Results of the<br>purpose of the sortie<br>or mission, and<br>findings of immediate<br>interest or great<br>significance.                             | The duration of<br>the operation.                                                                                                     |
| MISSION<br>REVIEW<br>REPORT                                                                               | Directly after the<br>SPOT(HOT Report,<br>NATO) and/or Imme-<br>diate Report - first<br>if neither of these is<br>produced for the<br>sortie. | To report all<br>significant items of<br>intelligence ob-<br>served on each sortie<br>to enable users to<br>order prints or<br>Detailed Reports as<br>needed. | Locality, category,<br>imagery data and<br>description of changes<br>to all significant<br>installations and<br>activities observed<br>in the sortie. | Permanence of<br>intelligence items is<br>limited but coverage<br>data is good for the<br>life of the film.                           |
| SUMMARY<br>REPORT                                                                                         | Priorities are<br>established by the<br>order originating the<br>report.                                                                      | To report the<br>trends and status<br>of targets over a<br>given period of time.                                                                              | The status of<br>installations of a<br>particular category<br>within a given area<br>during a specific<br>period of time.                             | Generally limited<br>but may be kept for<br>review, comparison or<br>research uses.                                                   |
| DETAILED<br>REPORT                                                                                        | Priorities are<br>established by the<br>order originating<br>the report.                                                                      | To provide users<br>with complete infor-<br>mation an individual<br>targets or areas suit-<br>able for use in stra-<br>tegic and tactical<br>planning.        | Exact and<br>minute information<br>on particular instal-<br>lations gained from<br>thorough study of<br>imagery and other<br>intelligence sources.    | Generally unlimited<br>depending on its sub-<br>ject or the target but<br>may lose much of its<br>value after an attack.              |
| SPECIAL<br>REPORT                                                                                         | Priorities are<br>established by the<br>order originating the<br>report.                                                                      | To present infor-<br>mation which does not<br>correspond to the<br>specification outlined<br>for any of the other<br>standard reports.                        | Any subject<br>applicable to Imagery<br>Intelligence.                                                                                                 | Unlimited                                                                                                                             |

CHART 2

| FACTORS INVOLVED IN THE PREPARATION OF THE VARIOUS IMAGERY INTERPRETATION REPORTS |                                                                                                   |                                                                                                            |                                                                                                               |                                                                                           |                                                                                                 |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| REPORTS                                                                           | FACTORS                                                                                           |                                                                                                            |                                                                                                               |                                                                                           |                                                                                                 |
|                                                                                   | TIME IN PREPARATION                                                                               | PREPARED BY                                                                                                | INITIATED BY                                                                                                  | REFERENCE MATERIALS USED                                                                  | AMOUNT OF RESEARCH                                                                              |
| SPOT<br>(HOT Report, NATO)                                                        | Shortest possible time.                                                                           | Advanced bases or field units - the lowest echelons to which Imagery Intelligence units are assigned.      | Requirements set up by operational units. In cases of unusual findings, upon the interpreters own initiative. | Maps                                                                                      | None                                                                                            |
| IMMEDIATE REPORT                                                                  | Shortest possible time; no longer than 24 hours after the Imagery was taken.                      | Advanced bases or field units - the lowest echelons to which Imagery Intelligence units are assigned.      | Requirements set up by operational units. In cases of unusual findings, upon the interpreters own initiative. | Maps                                                                                      | None                                                                                            |
| MISSION REVIEW REPORT                                                             | No more than 48 hours after receipt of the sortie by the interpreter who will prepare the report. | Advanced bases or field units. If these do not have the capability it is done by a higher echelon unit.    | Routine requirement established by the command to which the Imagery Intelligence unit is assigned.            | Maps, comparative photography and reference reports and publications immediately at hand. | Should be kept to the absolute minimum which will insure accuracy of the information presented. |
| SUMMARY REPORT                                                                    | As required.                                                                                      | Usually higher echelon units.                                                                              | Routine requirement or request from operational or intelligence units.                                        | Generally the same as for Mission Review Reports.                                         | Moderate amount.                                                                                |
| DETAILED REPORT                                                                   | As required.                                                                                      | Usually higher echelon units.                                                                              | Request from operational or intelligence units.                                                               | Intelligence information, imagery and references from all available sources.              | Extensive.                                                                                      |
| SPECIAL REPORT                                                                    | As required.                                                                                      | May be prepared by any echelon imagery intelligence unit depending on the nature of the particular report. | Extraordinary request or requirement.                                                                         | Intelligence information, imagery and references from all available sources.              | Extensive.                                                                                      |

# CHART 3

| FACTORS INVOLVED IN THE PRESENTATION OF THE VARIOUS IMAGERY INTERPRETATION REPORTS |                                                                        |                                                                                                                              |                                                                                                   |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| REPORTS                                                                            | FACTORS                                                                |                                                                                                                              |                                                                                                   |
|                                                                                    | TRANSMISSION BY                                                        | FORM OF PRESENTATION                                                                                                         | GRAPHIC INCLOSURES                                                                                |
| SPOT<br>(HOT<br>REPORT,<br>NATO)                                                   | Fastest available means, telephone, radio, cable, courier or personal. | Verbal or written depending on the means of transmission used.                                                               | None                                                                                              |
| IMMEDIATE<br>REPORT                                                                | Fastest means other than oral, usually by courier or cable.            | Short written report also depends on method of transmission used. May be presented solely in the form of an annotated print. | Select print or prints if their value warrants it.                                                |
| MISSION<br>REVIEW<br>REPORT                                                        | Airmail or courier.                                                    | Accomplished on a prescribed form.                                                                                           | A plot map showing the coverage of the imagery is always included and is the only inclosure.      |
| SUMMARY<br>REPORT                                                                  | Mail, courier or most expeditious means.                               | A written report form and style of which depends upon the subject and nature of the particular report.                       | Tables, charts, prints or mosaics as required.                                                    |
| DETAILED<br>REPORT                                                                 | Mail, courier or most expeditious means.                               | A written report form and style of which depends upon the subject and nature of the particular report.                       | Prints, mosaics or any other graphical material which will aid in the presentation of the report. |
| SPECIAL<br>REPORT                                                                  | Mail, courier or most expeditious means.                               | A written report form and style of which depends upon the subject and nature of the particular report.                       | Prints, mosaics or any other graphical material which will aid in the presentation of the report. |

## APPENDIX VII

### GUIDE TO AERIAL SURVEILLANCE BRIEFINGS

---

#### 1. Situation

a. Enemy Forces: Identification, location, activity, strength, terrain.\*

b. Friendly Forces: Location and planned actions of friendly units; fire support available; missions and routes of other aircraft; attachments and detachments.\*

c. Weather forecast.

#### 2. Mission

#### 3. Execution

a. Plan of Operation.

b. Specific Requirements of Mission.\*

(1) Flight plan-routes, formations, check points (IP, CP, RP), zones.

(2) Loading plan.

(3) Landing plan.

c. Location of friendly airfields and alternate fields.

d. Coordinating instructions.

(1) Air traffic control.

(2) Artillery support—reference lines, preplanned,\* fire registrations, concentrations, and barrages.

(3) Ground units at objective. (Methods of contact and recognition).\*

(4) Other (specific coordination for specific mission).

e. Pick-up point for downed crews and passengers.

f. Reporting.

#### 4. Administrative and Logistics

a. POL requirements.

b. Maintenance.

c. Special equipment.

d. Evacuation.

e. Relief.

#### 5. Command Signal

a. Signal.

(1) Air-ground signals.

(2) SOL.

(a) Frequencies and call signs.

(b) Codes—authentication, map, and operational.

(c) Type and methods of giving in-flight reports.

b. Command. Chain of command and location of the commander.

---

\* Presented by ARLO/G2 Air representative.

**APPENDIX VIII**  
**DEBRIEFING CHECKLIST**

---

DATE/TIME 171100 R March 1960

1. Mission No. 10 RS 8147
2. Element Designation: 1st Det, 1st MI Bn (ARS)
3. Type Mission: Visual—Photo—Electronic—Weather: Day—Night
4. Target(s):  
Route—Z 3 (Z 4)  
Area—C 1 (D 3)  
-----
5. Report Made 0958 and 1008
6. FAC—CRC—SCC Contacted 103 Report Made 0915
7. Deviations from Original Request: Yes \_\_\_\_ No. X Explain \_\_\_\_
8. Arty Adjustment—Ftr Strike NA
9. Observations:
  - a. ARMOR: Number 6  
Type Heavy  
Moving South (5 MPH)  
Where VIC DT 601482  
When 1005 (Carrying Troops)
  - b. TROOPS: Number \_\_\_\_  
Walking \_\_\_\_ In Trucks \_\_\_\_ Direction \_\_\_\_  
When \_\_\_\_  
In Bivouac \_\_\_\_  
Where \_\_\_\_  
Under Cover \_\_\_\_ Explain \_\_\_\_
  - c. SUPPLY INSTALLATIONS:  
Type Supplies \_\_\_\_  
Size of Area \_\_\_\_  
Where \_\_\_\_ Direction \_\_\_\_  
Convoys \_\_\_\_ When \_\_\_\_  
Where \_\_\_\_
  - d. HQ & CP's:  
Size \_\_\_\_  
Construction \_\_\_\_  
Traffic \_\_\_\_  
Where \_\_\_\_



e. COMMUNICATIONS & ELECTRONICS:

Type -----

Size & Construction -----

Where -----

f. WEAPONS: Type 155 MM How

Moving S at 15 MPH

When 0952

Number -----

In position No

Camouflaged: Yes ----- No. X

Dug-in ----- How -----

Bunkers -----

Where On road VIC DT 602453

g. FRONT LINES:

-----  
-----

10. Remarks: 1 long semitruck-trailer parked in field at coord DT 610582  
0955R Spot Report at 0958.

## APPENDIX IX

### MISSION REPORT

---

- |                               |                                 |
|-------------------------------|---------------------------------|
| 1. UNIT: 8th TRS              | 8. ACTUAL TIME OF               |
| 2. OBSERVER: Porter           | DEPARTURE: 011000               |
| 3. DATE/TIME: 011200 Oct 1960 | 9. LANDING TIME: 011135         |
| 4. MISSION NR. 016            | 10. SPOT RPT 1, 2, 3, & 4, this |
| 5. CALL SIGN: Snooper 4       | mission.                        |
| 6. TYPE MISSION: Vis/Photo    | 11. SIGHTINGS:                  |
| 7. TYPE A/C: RF101            |                                 |

No sightings made on photographic portion of mission due to pilot's concentration on flying mission. The following information supplements Spot Report No. 4.

| No. | Time   | Location          |
|-----|--------|-------------------|
| 4   | 011110 | BERNBACH PU611779 |

Estimated 45 flat cars, 30 empty. 15 flat cars, each loaded with one tank, size undetermined. One tank was in process of either loading or unloading, observer could not determine which. Two more tanks were moving in a northwesterly direction out of BERNBACH. Mission received flak damaging the aircraft, and necessitated its return to base. Pilot took confirmatory photography. Visibility excellent.

12. REMARKS: Immediate II reports will follow:

T. MC. ROOP  
Capt      Inf  
ARLO

## GLOSSARY OF SELECTED DEFINITIONS, TERMS AND ABBREVIATIONS

---

### PART A. Selected Definitions and Terms

*Aerial Reconnaissance*—The technique of reconnaissance employing aerial vehicles.

*Aerial Surveillance*—The technique of surveillance employing aerial vehicles.

*Airspace Surveillance*—The systematic observation of airspace by electronic, visual or other means, primarily for the purpose of identifying and determining the movements of aircraft and missiles, friendly or enemy, in the airspace under observation.

*Basic Cover*—See Initial Record.

*Combat Surveillance*—A continuous (all-weather, day and night) systematic watch over the battle area to provide timely information for tactical ground operations.

*Cover*—In aerial reconnaissance, the ground area represented on imagery.

*Cover Trace*—A graphic index indicating the area coverage of all imagery received.

*Detailed Intelligence Record*—(Special Record)—Imagery from a vertical or oblique viewpoint within the field army area of interest that will reveal more specific details of the terrain, enemy installation, troop concentrations and equipment than will the general intelligence record.

*Frontline Cover*—See General Intelligence Record.

*General Intelligence Record* — (Frontline Cover)—Permanent record images taken from the vertical viewpoint within the field army area of interest for use in determining current locations of enemy installations, troop concentrations, equipment and movement as well as to provide current cover for initial record.

*Imagery*—Images collectively produced electronically or by optical means on film, electronic display devices or other media.

*Image Interpreter*—An individual trained in the process of detecting, identifying, analyz-

ing and accurately locating with respect to a known reference, objects and activities portrayed on imagery; and to determine the tactical implications of those objects and activities.

*Initial Record*—(Basic Cover)—Imagery taken from the vertical point of view of the field army area of interest for use in operational planning, a map substitute, for comparative analysis with later cover, and to record seasonal changes.

*Mission*—The dispatching of one or more aircraft to accomplish one particular task.

*Moving Target Indicator*—A type radar presentation showing movement in an area.

*Permanent Echo*—A type radar presentation showing a reflection from objects in an area.

*Permanent Record Imagery*—Recorded images of a permanent nature. It is used in the process of detecting, identifying, and locating objects and activities for intelligence purposes.

*Reconnaissance*—A mission undertaken to obtain, through observation, information about the activities and resources of an enemy or potential enemy; or to secure, through observation, data concerning the meteorological, hydrographic, or geographic characteristics of a particular area.

*Scale*—The relationship between map or photo distance and ground distance expressed as a fraction (1/25000) or as a ratio (1:25000) meaning 1 inch on a map equals 25,000 inches on the ground.

*Special Record*—See Detailed Intelligence Record.

*Sortie*—An operational flight by one aircraft.

*Surveillance*—Continuous observation of an area or of gunfire.

*Tactical Air Reconnaissance*—A category of tactical air support designed to procure information of friendly or enemy dispositions,

weather and terrain which will be of value for planning or executing operations.

#### *PART B. Abbreviations*

AAE—Army Aviation Element  
AOC—Air Operations Center  
ARLO—Air Reconnaissance Liaison Officer  
ASOC—Air Support Operations Center  
CTOC—Corps Tactical Operations Center  
DTOC—Division Tactical Operations Center  
EEI—Essential Elements of Information  
FATOC—Field Army Tactical Operations Center

FSE—Fire Support Element  
ICTOC—Independent Corps Tactical Operations Center  
MTI—Moving Target Indicator  
SCC—Sector Control Centers  
SLAR—Side Looking Airborne Radar  
TASE—Tactical Air Support Element  
TAF—Tactical Air Force

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BY ORDER OF THE SECRETARY OF THE ARMY:

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NG: State AG (3); Corps, Div, Div Arty, Bde, Regt/Gp/bg, Bn (1).

USAR: None.

For explanation of abbreviations used, see AR 320-50.

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Appendix III EXAMPLE OF A G2 AIR COLLECTION WORKSHEET

| EEI                                                    | INDICATIONS                                                    | BASIS FOR SPECIFIC ORDERS OR REQUESTS                                                           | 12 JULY                                  |                                              |                       |                            |                  |                   | 13 JULY                |                                          |           |                            |                 |                   | 14 JULY                |                                              |                       |                            |                  |                   | Remarks<br>** With confirming photography                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------|------------------------------------------|----------------------------------------------|-----------------------|----------------------------|------------------|-------------------|------------------------|------------------------------------------|-----------|----------------------------|-----------------|-------------------|------------------------|----------------------------------------------|-----------------------|----------------------------|------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                        |                                                                |                                                                                                 | Type Recon<br>& Sensor                   | Frequency<br>of Recon                        | TOT                   | Scale Photo<br>& Nr Prints | Spot<br>Reports  | Army<br>Req<br>Nr | Type Recon<br>& Sensor | Frequency<br>of Recon                    | TOT       | Scale Photo<br>& Nr Prints | Spot<br>Reports | Army<br>Req<br>Nr | Type Recon<br>& Sensor | Frequency<br>of Recon                        | TOT                   | Scale Photo<br>& Nr Prints | Spot<br>Reports  | Army<br>Req<br>Nr |                                                                                                                                                                                                                                                                                                                                                               |
| 1. What are enemy dispositions?<br><u>Special Attn</u> | a. Location & est strength of enemy in contact, reserves, arty | (1) Report location, strength, and activities of troops NYSTAD-THORN Ridge (Div Obj)            | Photo <sup>1</sup> & Visual <sup>2</sup> | P-One time<br>V-4 hrs                        | P-1000<br>V-0600-1600 | 1:5,000<br>2 sets          | No<br>Yes        |                   | Visual <sup>2**</sup>  | 2 hrs                                    | 0600-1800 | 1:7,500<br>1 set           | Yes             |                   | Visual                 | 1 hr                                         | 0600<br>Obj sec       | - - -                      | Yes              |                   | 1. Defense overlay DR097540, DR155571, DR150582, DR900550<br>2. Subsequent visual - confirmatory photo of major changes<br>3. Defense overlay of area<br>4. Subsequent visual; confirming photo significant changes<br><br>5. Points for specific search developed in coordination w/chief, FSE                                                               |
|                                                        |                                                                | (2) Rpt loc and str occ strong pts vic Hill 609 (1551) & Hill 406 (1151)                        | Photo <sup>3</sup> & Visual <sup>4</sup> | P-One time<br>V-2 hrs                        | P-1100<br>V-0600-2000 | 1:5,000<br>2 sets          | No<br>Yes        |                   | Visual **              | 1 hr                                     | 0600-2000 | 1:7,500<br>1 set           | Yes             |                   | Visual                 | Continuous                                   | 0500 until<br>Obj sec | - - -                      | Yes              |                   |                                                                                                                                                                                                                                                                                                                                                               |
|                                                        |                                                                | (10) Rpt loc arty & mortar psns in zone - incl unoc and number pcs.                             | Visual **                                | Continuous all missions spec emphasis. See 5 |                       | 1:7,500<br>1 set           | Yes              |                   | Visual **              | Continuous missions spec emphasis. See 5 |           | 1:7,500<br>1 set           | Yes             |                   | Visual                 | Continuous all missions spec emphasis. See 5 |                       |                            | Yes              |                   |                                                                                                                                                                                                                                                                                                                                                               |
|                                                        | b. Presence of obstacles                                       | (11) Rpt loc & extent obstacles & road blocks along N-S rds DR1247-1156 & DR1647-1456.          | Visual **                                | 4 hrs                                        | 0940-1630             | 1:7,500<br>1 set           | Yes              |                   | Visual **              | 4 hrs                                    | 0940-1940 | 1:7,500<br>1 set           | Yes             |                   | Visual                 | 1 hr                                         | 0500 until<br>obj sec | - - -                      | Yes              |                   |                                                                                                                                                                                                                                                                                                                                                               |
|                                                        | c. Dumping, ammunition & engr supplies                         | (12) Rpt evid fortifications bldg in zone, emphasis St ELM (DR1351) & PRUTH (DR 1454).          | Photo                                    | One time                                     | 1300                  | 1:10,000<br>7 sets         | No               |                   | Photo                  | One time                                 | 1000      | 1:10,000<br>1 set          | No              |                   |                        |                                              |                       |                            |                  |                   |                                                                                                                                                                                                                                                                                                                                                               |
| 2. Will enemy attack prior 140430                      | a. Movement hostile units forward                              | (13) Rpt loc CPs, supply and evac instls in div zone N of St ELM (DR1351) depth line DR09580215 | Visual **                                | 4 hrs                                        | 0600-2000             | 1:7,500<br>1 set           | Yes              |                   | Visual **              | 4 hrs                                    | 0600-2000 | 1:7,500<br>1 set           | Yes             |                   | Visual                 | 2 hrs                                        | 0500 until<br>obj sec | - - -                      | Yes              |                   | 6. TAC Air Reconnaissance - special emphasis possible air strike; keep close contact<br>7. Coverage shifts to area North Line DR 0958, DR 2158<br><br>8. Combine w/item 16; after objective taken coverage shifts to area N line DR 0958, DR 2158<br><br>9. Spot rpts on attempts to repair or cross canal - probable lucrative arty or close air support tgt |
|                                                        |                                                                | (16) Rpt volume & type traffic across HOST Canal and rds ldg S from NYSTAD & THORN.             | Visual                                   | 1 hr                                         | 0600-2000             | - - -                      | Over 10 vehicles |                   | Visual                 | 1 hr                                     | 0600-2000 |                            | Over 10 veh.    |                   | Visual                 | Continuous                                   | 0500 until<br>obj sec |                            | Over 5 veh       |                   |                                                                                                                                                                                                                                                                                                                                                               |
|                                                        |                                                                | (17) Rpt mvt tnk unit (est div) vic DR 1273.                                                    | Visual <sup>6</sup>                      | 4 hrs                                        | 0600-2400             | - - -                      | Yes              |                   | Visual <sup>6</sup>    | 2 hrs                                    | 0000-2400 |                            | Yes             |                   | Visual                 | 1 hr                                         | 0000-2400             |                            | Yes              |                   |                                                                                                                                                                                                                                                                                                                                                               |
|                                                        | b. Increased air reconnaissance                                | (18) Night and inclement weather coverage (same items as 16 & 19)                               | SLAR                                     | 2 hrs                                        | 2000-0600             | - - -                      | No               |                   | SLAR                   | 2 hrs                                    | 2000-0600 |                            | No              |                   | SLAR <sup>7</sup>      | 2 hrs                                        | 2000-0600             |                            | Yes              |                   |                                                                                                                                                                                                                                                                                                                                                               |
|                                                        |                                                                | (19) Rpt amount & type air activity in zone                                                     | All Flights                              |                                              |                       |                            |                  |                   |                        |                                          |           |                            |                 |                   |                        |                                              |                       |                            |                  |                   |                                                                                                                                                                                                                                                                                                                                                               |
| 3. Can enemy w/draw over HOST Canal                    | c. Replacement or reinforcement                                | (20) Rpt mvt on roads North FEBA                                                                | Visual <sup>8</sup>                      | 1 hr                                         | 0600-2000             | - - -                      | Over 10 veh.     |                   | Visual <sup>8</sup>    | 1 hr                                     | 0600-2000 | - - -                      | Over 10 veh.    |                   | Visual <sup>8</sup>    | 1 hr                                         | 0500-2000             |                            | Over 5 veh       |                   |                                                                                                                                                                                                                                                                                                                                                               |
|                                                        |                                                                | (26) Rpt alt crossing points HOST Canal & condition bridges DR 1157 and DR 1657                 | Photo (Drone)                            | One time                                     | 1400                  | 1:10,000<br>2 sets         | No               |                   | Visual **              | 2 hrs                                    | 0600      | 1:10,000<br>1 set          | Yes             |                   | Visual                 | 1 hr                                         | 0500 until<br>obj sec | - - -                      | Yes <sup>9</sup> |                   |                                                                                                                                                                                                                                                                                                                                                               |



FM 30-20 AERIAL SURVEILLANCE—RECONNAISSANCE, FIELD ARMY—1961

